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CANADA

SEVENTH CENSUS OF CANADA, 1931

VOLUME XIII

MONOGRAPHS

UNEMPLOYMENT
DEPENDENCY OF YOUTH
RURAL AND URBAN COMPOSITION OF THE
CANADIAN POPULATION
RACIAL ORIGINS AND NATIVITY OF THE
CANADIAN PEOPLE

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The Hon. JAMES A. MacKINNON, M.P., Minister of Trade and Commerce



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REPORT ON THE SEVENTH CENSUS OF CANADA, 1931

*To His Excellency the Right Honourable the Earl of Athlone, K.G., P.C., G.C.B., G.C.M.G., G.C.V.O.,
D.S.O., Governor General and Commander-in-Chief of the Dominion of Canada:*

MAY IT PLEASE YOUR EXCELLENCY:

I have the honour to lay before Your Excellency the thirteenth volume of the Report of the Seventh Census of Canada taken as of date June 1, 1931. This volume contains the monographs dealing with unemployment, dependency of youth, rural and urban distribution and racial origins and nativity and is based on the census with occasional use of supplementary data.

I have the honour to be

Your Excellency's most obedient servant,

JAMES A. MACKINNON,
Minister of Trade and Commerce.

OTTAWA, January 15, 1942.

PREFACE

Volume XIII of the Seventh Census of Canada comprises the 1931 Census monographs dealing with unemployment, dependency of youth, rural and urban distribution and racial origins and nativity. These form part of a series prepared under the general direction of the late Mr. M. C. MacLean, based on the 1931 Census with occasional use of supplementary data. They have already been published as separates and are arranged in this volume by Mr. A. L. Neal, Chief, Social Analysis Branch. Others of the series—those dealing with families, housing, illiteracy and school attendance, age distribution and life tables—will be found in Volume XII.

Unemployment.—The monograph on unemployment has endeavoured to meet three requirements: (1) To provide information on unemployment and to explain the problem. This is done particularly in the Introduction and Chapter II. (2) To reach worthwhile conclusions on unemployment. The nature of these conclusions is discussed at the end of each chapter while the conclusions themselves are collected in a general summary at the beginning of the monograph. (3) To develop a technique whereby the census data can be linked up with yearly or even monthly data collected from other sources. This technique, derived from the findings throughout, particularly Chapters III and IV, is discussed in detail in Appendix 1.

In developing this technique, the most approved scientific methods were used. Instead of relying upon findings from large aggregates and general averages, advantage was taken of the mass of cross-classifications afforded by the improved tabulating machinery in the Bureau to throw these classifications under single survey by means of the scatter diagram; to select from this a representative sample of homogeneous groups; then to render these groups still more homogeneous by (1) keeping certain controls constant; (2) studying differences in behaviour according to the degree of homogeneity. In this way the individuality of the groups was revealed. The next procedure was to study both the tendencies of this individuality and the nature of the groups which showed no individuality, *i.e.*, were dominated by characteristics common to the whole. In dealing with the most important set of groups, *viz.*, industries, it was found that the *common factor* was the requirements of the population as a whole, the industries differing in degrees of unemployment according as the wants they fulfilled were more or less general and necessary. On the other hand, the *individuality* tended in a definite direction. As industries increase in strength, as measured by decreasing unemployment, their attitude towards the worker becomes increasingly rigid, *i.e.*, they tend to employ a minimum of workers and retain these workers permanently. The results of this process are far-reaching; the wastage thus discarded is human beings.

Part I is made up of the text of the monograph, throughout which are interspersed tabular statements numbered in Roman numerals. The final chapter provides supplementary textual and tabular material from the Census of 1936 corroborating our deductions from the data of 1931. Part II consists of the estimates of unemployment, basic tabular material and other related tables numbered in Arabic. Appendices 1-9 contain related material, largely mathematical, ordained for the use of the reader specially interested in the details of method and calculations but not essential to an understanding of the text. Appendix 10 reviews briefly writings on unemployment by contemporary economists, indicating points of agreement and disagreement with our conclusions.

The monograph was prepared under the general direction of the late Mr. M. C. MacLean, M.A., F.S.S., whose special contribution is Chapters I, VI, IX, X and XI and Appendix 1, by Mr. A. H. LeNeveu, M.A., whose special contribution consists of the Introduction and Chapters II and XII; by Mr. W. C. Tedford, M.A., who is responsible for Chapters III and IV and Appendices 2 and 3; and by Mr. N. Keyfitz, B.Sc., whose special contribution is made up of Chapters V, VII and VIII and Appendices 4-10. The material was prepared for press by Miss E. M. Carmichael, B.A.

Dependency of Youth.—The present study is one of several analysing and interpreting data obtained by the decennial census. It draws freely on related statistics from other sources, especially those compiled in the Education Branch of the Dominion Bureau of Statistics, in an attempt to sketch the main outlines of the youth problem that has come so much to the fore in recent years.

Economic consequences of the lengthened dependency of youth are given more space than social consequences, not because the latter are considered of lesser importance, but because there is less of a statistical nature recorded concerning them. Moreover, no attempt is made to offer a solution to the problem discussed, but the first step toward solution of any problem is an understanding of it, and it is hoped that the study will contribute something to this end.

The monograph has been written by J. E. Robbins, Ph.D., Chief of the Education Branch of the Bureau, assisted by Mr. M. A. Alpert, B.A., and Miss Catherine Revell.

Rural and Urban Composition of the Canadian Population.—The general Administration Report on the Seventh Census of Canada pointed out that the present Census Monograph would have for subject "one of the most important of modern tendencies, namely, the rapid growth of urban as compared with rural population". Since Confederation, the rural population of Canada, as usually defined, has less than doubled, while the urban has multiplied approximately eight times. In 1871 four out of every five of the people were rural, whereas in 1931 considerably more than half of the total population was urban, the rural proportion having declined at every Dominion Decennial Census.

The Foreword to this monograph emphasizes the general tendency toward urbanization and presents outlines of its extent and causes, of the methods and procedure followed in the study, the checks to urbanization and the reasons for predicting a decline in the rate of the de-ruralizing trend. The conclusions are synopsisized in greater detail in the chapter summaries, and in each chapter special attention has been given to the illustration of most significant rural-urban phenomena by diagrammatic methods.

The body of the monograph consists of three parts. Part A comprises a very brief review of the economic, social and biological factors determining the density of population. In Part B the general growth of urban versus rural population in Canada is sketched from the first census of New France in 1665-6 to the first *decennial* census in this country in 1851, and from that year the trends are traced more minutely through the seven Dominion Decennial Censuses to 1931. By short introductory notes, urbanization in Canada is compared with that in several other countries. Twentieth century suburban migration and the expansion and composition of the population of "metropolitan districts", embracing at least ten 'greater' cities in Canada with their constituent satellite communities, are examined at some length. Various phases of rural and urban distribution in the Dominion, reflected in such attributes of population as sex, age, conjugal condition, birth rate, racial origin and nativity, and the effect on population growth of certain forms of "sectionalism" as manifested in these attributes, are treated in Part C.

The progress of unification in Canada and population growth, despite many kinds of sectionalism resulting from differences in race, religion, sex, occupation, standard of living, etc., and not necessarily confined to rural-urban, geographical or territorial division, is suggested as subject of a separate monograph in connection with the 1941 census. Supplementing three definitions of rural and urban population analysed herein, two additional methods, one involving a typological classification and the other an extension of the 'greater' city principle to the smaller urban units, are recommended for both private and government research. In the Appendices a summary of the law and practice in each province in regard to urban incorporation is preceded by an abbreviated tabular statement of the prerequisites to such incorporation.

The study was prepared under the joint authorship of Messrs. H. G. Caldwell, General Economics Adviser, and S. A. Cudmore, then Chief of the General Statistics Branch and Editor of the Canada Year Book. It constitutes one of the series of Census Monographs, directed by the late Mr. M. C. MacLean, Chief of Social Analysis, who together with Mr. A. J. Pelletier, Chief of the Census Branch, gave valuable suggestions. Acknowledgment is also made of the co-operation of several members of the staff of the Bureau in revising manuscript, reading proof, compiling tables and draughting the charts.

Racial Origins and Nativity of the Canadian People.—This study deals with the different nationalities and stocks in the Dominion. The general purpose is to measure the progress of assimilation and to discover and evaluate the forces which are working toward that end. The first three chapters discuss the changing proportions and date of arrival of the different nationalities and origins in Canada and the provinces; the two following, their distribution as regards age, sex, conjugal condition and urban and rural residence. The sixth chapter presents for the first time indices of segregation, by birthplace and race, of which much effective use is made in subsequent sections of the monograph in explaining the behaviour of the various groups. Chapters VII to XV include an examination of data on intermarriage, naturalization, language spoken, illiteracy, crime, occupations, unemployment, fertility, infant mortality, mental institutions and religion.

Where comparative figures are available, special attention is paid to changes occurring during the last inter-censal decade. Subjects on which information was collected for the first time in the 1931 Census are given prominence in the analysis. Extensive use is made of the method of partial and multiple correlation which throws much new light on the nature of many social problems. Important associations have been discovered and measured, which are not only of practical significance to Canada but of general scientific interest.

Preceding the main body of the work is a summary chapter which sets out briefly the main facts and conclusions, and an introduction in which appears for the first time an origins table adjusted for mis-statements as revealed by an analysis of collateral materials collected by the census. Part I is devoted to textual material and graphs; the underlying tables are designated by Arabic numerals and appear in Part II.

The monograph was written by W. Burton Hurd, O.B.E., Professor of Economics of McMaster University. Miss M. H. Buckley was responsible for the preparation of the special tabulations; Miss A. S. Dolghan, Miss M. E. MacGillivray, Miss M. E. Fleming and Mr. D. A. McLean assisted in working the correlations; Miss E. M. Carmichael helped in preparing the manuscript for the press and in the reading of proof; the graphs were drawn by Mr. J. W. Delisle.

R. H. COATS,

Dominion Statistician.

January 15, 1942.

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UNEMPLOYMENT

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SUMMARY

DEFINITION OF UNEMPLOYMENT

In the study of unemployment the first problem is to define the term so as to dispel confusion in the concepts that have grown around it. Before measuring any phenomenon—indeed before we are justified in discussing any phenomenon—it is essential that we know just what we mean and that in the use of the term we mean the same thing at one time as at another. "Unemployment" has been variously applied to (1) the worker working for pay; (2) the whole working force, and (3) the whole population of working age. The Canadian Census definition refers only to the first of these three. The chief reason for this is that it is the only form of unemployment that can be measured, but there are other reasons also, especially the fact that in making provisions against unemployment in other countries, as by unemployment insurance, this is the form of unemployment that is dealt with. We may contrast this definition with four others that are tacitly when not explicitly assumed: (1) the shrinkage in industry, *e.g.*, when N workers are employed in one month and $N-X$ in the next, the unemployed are X ; (2) the unemployed in labour unions, the large body not belonging to labour unions being excluded; (3) the total working force, including such workers as farmers, employers, and independent workers such as the village blacksmith, cobbler, etc., of unemployment among which there is, needless to say, no measure; (4) the population of working age, including not only those mentioned in the preceding item but also young persons who have never been engaged in a gainful occupation and older persons who never worked and probably never will, those at or beyond the limit of working age as well as old persons. As no precise limit can be set to "working age," the latter are not measurable. The numbers in the various categories are shown in Chapter II of this monograph; they are so large and their unemployment status so ill-defined that if mentioned at all it is as something entirely distinct from unemployment according to the census definition, which as already stated applies to unemployment among wage-earners, *i.e.*, among those who normally work for pay but are not working and hence not receiving this pay.

No doubt a measure of unemployment according to this definition fails to gauge the full extent of unemployment as a social phenomenon, but so does any other measurement. The justification of the definition is that it provides a measurable quantity which the others do not; furthermore, definition 3 above, the most comprehensive of all the definitions, even if measurement could be applied to it, is not completely comprehensive. This can easily be seen from the census of earnings. Since wage-earning employment is entered upon by the wage-earner for the purpose of earnings, it is to the point to consider his unemployment from the point of view of the earnings which he loses. It is impossible to set a limit to minimum earnings (although in this respect this social feature is not different from other features, since any determinant is arbitrary) but suppose the limit of minimum earnings at the average earnings of the unskilled labourer in Canada in 1931, *viz.*, \$480 (for males), is accepted. There were at least 641,460* male wage-earners in 1931 who earned less than \$450 (sufficiently near to the average male labourer), and these earned, on an average, \$220. These included certain farm labourers, housemaids, etc., who received board in addition, but well over half of the 641,460 were outside these cases. The remainder earned on an average \$1,273. If the average worker had worked the whole year at the existing rate of pay he would have received \$1,174. Consequently slightly more than two-thirds of the workers were \$99 better off than the average would have been if he had worked the whole year. Of the other third at least half were almost completely submerged. In other words, there is a form of unemployment which is frequently overlooked entirely, *viz.*, that of persons presumably working *part* of the time but earning an amount insufficient to meet the requirements of the lowest standard of living. These must either be partially supported or live in misery. This is, perhaps, a more important form of unemployment.

* In addition to an unknown number in this category out of 74,303 who did not state their earnings.

than any other, since in 1931 it embraced nearly a third of the workers, while the remaining workers suffered very little. In other words, it would seem that unemployment as a social problem, or from the human side of the question, is not measurable by averages or generalities but by forms of dispersion and distribution. The present study, therefore, has set out to deal particularly with the dispersion aspects of the data on the subject.

ACCURACY OF THE DATA

Before entering fully into the nature of the story which is revealed by the data on unemployment, it is necessary to examine these data for accuracy. Two forms of inaccuracy may arise in statistical data: (1) the data may report facts erroneously, *i.e.*, the occurrences they report have not occurred; (2) the facts they report may have occurred but only as events peculiar to the time at which they were reported, *i.e.*, they have no significance except at the time for which they were reported. The second form of inaccuracy is fully as deleterious as the first; Mrs. Candour is more pernicious than the slanderer with a reputation as such.

It is obvious that any study of unemployment data is vitiated by lack of confidence in the basic data and questions as to the accuracy of unemployment data have arisen from time to time. Information on this subject is not obtained in many countries because of a *priori* doubts as to the possibility of obtaining it accurately. For example, among items of information collected by the Canadian Census is one dealing with the time lost by the wage-earner during the year immediately preceding the census date; doubts have been cast upon the ability of the enumerated to answer this question accurately, and very few countries ask it. As a result the most important aspect of unemployment is unexplored—the human side of unemployment has been left in the background while the economic aspect (as relating to the country as a whole rather than to the individual worker) has been uppermost. Less subject to attack has been the possibility of ascertaining information as to how many are not working or are out of work on the date of the census or during the week immediately preceding the census. This also, it has been thought, is not only subject to inaccuracies, but as a sample of what goes on during the year is subject to a strong bias differing with different bodies of workers. Even this source of information, therefore, is too often ignored or given a secondary position to such information as (1) unemployment in labour unions; (2) unemployment among persons coming under Unemployment Insurance Acts, etc. It is submitted that information from these last two sources misses a great part of the unemployment problem. As already shown, about a third of the wage-earning workers are submerged so far as employment is concerned. These are the subjects for relief, etc., who make unemployment a problem. Yet this element is almost entirely ignored in labour union data, and in data connected with unemployment insurance in many countries. Even in the United Kingdom where all or nearly all classes come under the Insurance Act, such workers as servants are omitted. A census alone can give a full account of all the workers.

The reason for failure to collect the data mentioned are, as just said, *a priori*. But the same *a priori* reasoning would appear to apply equally to other forms of census data collected and accepted without question. Age, which is fundamental to all the census data on population, is at least as open to this form of doubt and other rubrics could be mentioned. The relevant point is: Is the information elicited by a question on the duration of unemployment more subject to inaccuracy than other generally-accepted census data?

It can indeed be demonstrated that if the information is taken as for a particular individual it is apt to be inaccurate. There are empirical reasons much stronger than *a priori* ones for this. The individual is apt to commit the following vagaries: (1) When he is dealing with numbers occurring in the past, he is apt to over-emphasize the round numbers (ending in 0 or 5) as well as the even numbers and to under-emphasize the odd; this also occurs in statements of age, etc., and leads to curious results. (2) If he is found in certain occupations (*e.g.*, teaching) he is apt to regard holidays as time unemployed. (3) He is apt to forget unemployment lasting a day at a time and remember only long continuous periods of unemployment. (4) He is apt to over-emphasize critical periods like four weeks (as equivalent to a month), 26 weeks (as equivalent to half a year), etc.

Now, first, it is obvious that other census rubrics are subject to the same inaccuracies. Secondly, the census is not concerned with individual cases which can be investigated and dealt with singly; what the census is concerned with is information relevant to aggregates. If the

information is true for every individual of an aggregate the ideal is achieved, but since this is impossible the question that arises is: For how small an aggregate is the information true? The inaccuracies described, not inaccuracies of memory to which alone the *a priori* objections apply, but idiosyncracies, wilful exaggerations, etc., are of a kind that tend to disappear when large numbers instead of individuals are taken, or they are capable of being corrected by smoothing. If the information is accurate for an aggregate as small as 200 individuals, then for all purposes dealing with unemployment as a social phenomenon, this would seem to be satisfactory.

Chapter I attacks this question from many angles and arrives at the conclusion that for as small an aggregate as 200 persons the information on duration of unemployment during the year is satisfactorily accurate. Further, Chapter I and also Chapter III (on industries) show that the duration data behave more consistently in relation to other data than the information dealing with only one day—the date of the census. Not only does the latter display a bias but it is apt to fail to reveal certain relationships between the working body and that part of it which is not working, which the former brings out. Several instances of this could be given. For example, in a certain town there was a large body of persons not working on June 1. This would be accepted without question as a sample of the unemployment condition of that town, if the data on duration with which to compare it were not available. In point of fact, the two did not cohere. The June 1 data gave a high percentage unemployed, whereas the duration data revealed only a very short average period of unemployment during the previous year. It developed that around this particular day there was a temporary lay-off in the plant in which most of the workers in this town were employed, which was of short duration but was responsible for practically all the unemployment reported during the preceding year. Thus an error was introduced on this day (as a sample of the year) which was not a seasonal bias but an incident or accident which was “ironed out” by the year’s data. Again, the year’s statistics correlated much better with certain attributes and conditions of the workers such as age, earnings, etc., than the single day statistics. On the other hand there were a few with which the day’s statistics correlated better, and in any case the June 1 data were useful in conjunction with the year’s in revealing such phenomena as the relative seasonal bias in different occupations and industries. In other words, both forms of data were found useful and necessary. Another set of data which were found to possess special significance was revealed in the answers to the question: “How many lost any time during the year?” Thus three sets of data each with its own meaning had to be reconciled and analysed, and it was found that satisfactory reconciliation was possible.

A further source of error was mentioned in the first part of this section, *viz.*, whether the event of unemployment on a certain date or within a certain period was significant as applying to future time or as descriptive of any other period than that during which it occurred. This is discussed specifically in Chapter I, but it may be regarded as one of the main topics of each chapter in the monograph, and aspects of it are covered in most of the conclusions reached. It may be definitely stated here that the census data on unemployment for a certain day or a certain year have real permanent significance. Since for many reasons we are prevented from examining quantitatively the behaviour of unemployment in relation to other population attributes over a period of years, we employ, in the following, another approach. As a biologist traces the origin of species by comparing examples at different stages of their evolution, we examine the unemployment of a certain year in its behaviour from group to group of workers. We take different industrial, age and occupational groups and compare one with another. We effect a break-up wherever possible into homogeneous groups, and thereafter allow for irrelevant or accidental features, removing also what is common to the whole in order to define the individual. The emphasis throughout is on the report given by the person and nowhere on mere averages. Proceeding in this way it is reasonable to believe that permanent relationships can be unearthed if they exist. The findings as to such permanent relationships will now be summarized.

UNEMPLOYMENT IN RELATION TO THE INDUSTRIAL STRUCTURE

Having in mind the principles discussed in the latter part of the above section, the first task of the study on unemployment in industries was to obtain a break-up into homogeneous groups. A great deal of Chapter III is devoted to a method of obtaining a cross-section of the industry groups to show the inter-relationship of industries more adequately than it is shown by averages

based upon large heterogeneous aggregates. Thus we can not depend upon the story told by the main industry "manufactures," as compared with, say, "services," since both are heterogeneous and to a certain extent overlap. This heterogeneity and overlapping is by no means confined to industries or the general subject of unemployment. The ideal conditions for the study of any subject would be to have under a single survey every individual dealt with, or at any rate every homogeneous unit placed in compartments in their proper relationship. As this is obviously impossible the next best is to obtain a cross-section representative of the whole. In extracting this cross-section an important part of the task of Chapter III may be said to be accomplished; the results are shown in Statement XLIX of that chapter. The information contained therein is a useful finding in itself.

The next task was to extract the interpretation of this cross-section. This was done by a series of classifications similar to the classification of specimens in a biological study. The characteristics of the industries comparable to the general average and of those departing widely from this general average were studied. Only by separating the attributes belonging to the general average is it possible to arrive at the attributes peculiar to the individual. (See Part B of Chapter III.)

The interpretation in brief is as follows:—

(a) Industries in relation to the employment of the worker would seem to be capable of being arranged in a scale so as to mark stages of evolution from the lowest to the highest extremes of this scale. Reasons can be given for believing that the degrees marked on this scale, although founded on the facts of a single year, correspond with what happened over periods of time (secular and cyclical), although the facts of these periods can not be so scaled for want of comparable (quantitative) data.

(b) When so arranged, a definite meaning is written into the relationship of industry to the worker. At the lower extreme the differentiation between the employed and unemployed worker is practically nil, i.e., the unemployed may be said to belong to the same class as the employed; to-day A is employed and B unemployed; to-morrow the situation may be reversed. It is true that A and B together lose more employment over a period of time than at the upper end of the scale but the loss is shared. As we ascend the scale the differentiation between A and B becomes continuously greater, until at the upper extreme A is hardly ever unemployed and B is hardly ever employed. In other words, from B's point of view he belongs to the industry; from the industry's he does not. This dualism in the point of view of the worker and of the industry has caused much misunderstanding of the unemployment situation. From the point of view of the industry, unemployment varies directly as the shrinkage in the industry and inversely as its expansion; from the point of view of the worker, unemployment varies directly with a series of periods of expansion each followed by a period of shrinkage; left-overs carried from one period of expansion and shrinkage never having time to be absorbed in the next expansion or of otherwise adjusting themselves to the changes.

(c) Before entering fully upon the main argument, it is necessary to complete the description of the scale. There are certain ear-marks by which industries at different parts of the scale may be identified. Emphasis is here laid upon the point that these are ear-marks only—mere manifestations of certain fundamental features, not the fundamental features themselves. Among these may be mentioned three. From the lower to the upper extreme there are: (1) progressively higher earnings; (2) increasing selectivity in age content; (3) increasing female content. Taking the last mentioned as illustrating what was meant by saying that these are only ear-marks, the increasing female content was found to be merely indicative of an increasing proportion of what we may call permanent staff such as office employees, etc. If "proportion of office employees" or "office-employee content" had been substituted for female content it would have served the purpose equally well (i.e., as a manifestation), although neither the one nor the other gives a complete enumeration of the "permanent staff content" (there are office employees that are not females while there are various kinds of permanent staffs that are neither—e.g., police, managers, persons permanently responsible for certain machines, etc.). However, the increasing proportions of females correlate with and indicate the tendency to employ increasing proportions of permanent staffs, and there is an outward manifestation (useful when we have other manifestations) of

this tendency. If we knew exactly the full number of permanent staffs or if "permanent" itself were an absolute instead of a relative concept, we would not need these indirect manifestations; but there are degrees of permanency and for this reason alone the full numbers can never be known.

Strangely enough, certain other manifestations, which might be expected to show up clearly, are largely implicit in these three. Among these may be mentioned regional, seasonal and juvenile unemployment. A point in connection with these manifestations is of general statistical bearing. The purpose of testing industries for age content, etc., was that mentioned on pages 4 and 5, viz., standardization, so as to correct industry groups for heterogeneity. Now it appeared that if industries had been standardized for age content, etc., as originally intended, the result would have wiped out the individuality instead of uncovering it, e.g., if we took two industries with different age content and standardized for age we would have removed a manifestation of a fundamental condition of the difference between these two industries. Statistics are often faced with problems of this kind. "Other things being equal, such and such will be such and such" but the other things are not and can not be equal.

More fundamental manifestations, partly latent and partly on the surface, are that as we rise in the scale of industries there is an increasing tendency to homogeneity in the industry. In the lower part of the scale we have merely an aggregate of individuals or occupations and the industries to which they are attached are unstable, appearing and disappearing; in the upper part we have the definite industry almost synonymous with a single occupation. Between the two extremes is a progression towards this definiteness and probable permanency.

The most fundamental principle disclosed, however, as we go up the scale, is an increasing selectivity of the worker by the industry. The industry at the top reaches the stage of almost perfect selection. Ideally the industry highest in the scale has the power to select exactly the type of worker it wants while the lowest has no power in the matter. Needless to say no industry reaches either of these ideal extremes, though, some approximate them closely. It must be emphasized that this selectivity is not necessarily the picking out of the skilled from the unskilled—it is the picking out of the *type* of worker that the industry needs from a large body of applicants, two conditions being here implied, (1) that the industry has definite needs and knows what they are, and (2) that among the applicants are a sufficient number of persons to fill these needs. It is conceivable that a strong industry might not need a single "skilled" person in the ordinary sense of the term.

Once the industry at the upper end of the scale has thus selected its worker he is permanently employed, i.e., in so far as the *needs* do not change and in so far as the industry does not contract. Being a strong industry it is not subject to changing needs and contraction to the same degree as weaker industries. It does not expand in good times and it does not contract in bad times—although it may *grow* steadily with time, and if the growth is steady it is able to maintain permanency in its staff. This, of course, is the ideally strong industry—still higher than the highest shown in our scale. Lower than the lowest shown in our scale is the industry that has no definite needs, that hires all its staff for short jobs.

In the middle of the scale are the "average" industries—industries created to meet the wants of the *whole* population but not their minimum or *vital* wants. Consequently these are subject to and reflect the rises and falls of the economic structure as a whole, not specialized rises and falls peculiar to the industries themselves. Several of these are listed in Part B of Chapter III.

Below the middle part of the scale are the *eyelic* industries depending for their existence upon sporadic and abnormal activities. They increase enormously in "boom" times and contract similarly in "depression" times. To meet their needs in boom times, they draw workers from all sources—from the unemployed, from the young, from the female population, from immigration, from old age and, unfortunately, from persons who have a gainful occupation as independent workers but are tempted away from these in the fever of the boom. These industries *create* workers and create them at all costs. No reasonable, or even conceivable, generating power could permanently maintain these industries at their boom activity. The result is first, deceleration, then stagnation, then depression. Since the worker, in order to be on the spot, is increasing faster than the industry—locally, if not throughout the whole country—we have unemployment, (1) light and local during the inflation, while seeking jobs; (2) heavier during the deceleration; (3) still heavier during the standstill; (4) enormous during the depression. With continued depression a reaction sets in. The source of supply, especially immigration, "own accounts" and

females, shrinks and slowly the unemployed who used to be own accounts or have arrived from another country seep back. The heaviest unemployment, therefore, *i.e.*, in point of numbers out of work according to the definition, might be expected at the beginning of a depression, not at the end of it.

Thus there are two conditions determining extreme unemployment (as distinguished from permanent unemployment which will be discussed presently): (1) abnormal increase in the number of persons liable to unemployment and (2) deceleration in the speed of a boom—not necessarily depression or even stagnation. If 1 is granted, 2 follows by mathematical necessity.

It would appear that cyclical activities are mainly responsible for heavy unemployment, but it must be remembered that a more serious aspect is lost to the situation by the fact that this is additive to a general process not so heavy, but serious because of its systematic and inevitable character.

It was pointed out earlier that the fundamental process from the lower to the upper extremes in the scale of industries was *increasing selectivity of the worker by the industry*. Since this principle is of major importance and is to be used as a premise on which are based conclusions backed not only by statistical data but also such as follow from the premise by mathematical necessity, it is necessary that the premise itself should be set out so clearly that it may be perfectly understood and that no doubt as to its validity may be entertained. There are two conditions to be fulfilled in establishing its validity: (1) that the existence of the property of selectivity be established; (2) that it be proved that this property exists in the strong not the weak industries.

The existence of the selectivity is established in many ways. The preference for certain ages is shown in Chapter III, but in much greater detail in Chapter V. The class of occupations is very definitely changing and the earnings are greater. There seems to be no room for doubt as to the *existence of the selectivity*.

The strength or weakness of an industry may quite reasonably be considered as measured by time lost. An array of industries in order, from those losing the most time to those losing the least, would in itself constitute a scale from weak to strong (this was not the entire basis used, as other considerations were included). As we proceed up such a scale the earnings increase; certain occupations, such as office employment, become more pronounced; there is definite selectivity in the matter of age, and there is greater permanency in the working staff. Together with all this is an increasing tendency for a greater and greater proportion of the year's employment to fall into the hands of those who lose no time. Those who do lose time lose as much as or more than those who lose time in weaker industries, but there are fewer and fewer of them the higher up the scale we proceed. Also as we proceed upward, those who lose time tend more and more to be a different class—as to age, earnings, etc.—from those who lose no time. Furthermore, the nature of the industries themselves tends in a definite direction with regard to the wants they supply; those at the upper end being either engaged in producing necessities or products established by long usage and sanction. Those in the centre, *i.e.*, the "average" industries, reflect the average conditions of the country as a whole and supply general wants but not absolute necessities. Again the industries which show continuously greater selectivity tend to show greater steadiness from time to time in the size of their staffs. Some industries increase enormously in boom times and shrink in depression, but those industries which show the greatest selectivity neither increase rapidly nor shrink rapidly. All this would seem to establish the principle that *selectivity is a property of the stronger industries*. The scale of industries already discussed is a progression from weaker to stronger on these several bases and is at the same time a progression in selectivity.

Now if this premise be taken as established, it follows, not only from the data assembled but of mathematical necessity, that selection has an inevitable concomitant, *viz.*, rejection and concentration. We are not selecting if we take all who offer. An inevitable part, therefore, of the process in the rise in the scale above-mentioned is that of leaving some of the workers behind. Then the selection is complete, *i.e.*, at the ideal upper end of the scale there is no more rejection, but until this stage is reached rejection goes on. Thus each step in such an ascent means the pushing down of some of the workers, *i.e.*, a greater and greater separation between the class unemployed from the class employed. The only alternatives are for the rejected to die, to emigrate, to become independent workers, or to remain unemployed. Even if all the other alternatives were equally likely, it is certain that unemployment must come first—the other alternatives merely determining its duration not its existence. If the scale of the industries as

derived from the data of 1931 really represents an evolution in time, then it follows that this has been going on as a secular trend. As already stated it is not so heavy as the cyclical unemployment but it is additive to this and is apt to exist in good as well as in bad times. Most important of all, it makes it more difficult for the person thrown out of work in a period of depression to be re-employed on the resumption of normal activity. To this is added the probability that a depression after a boom serves to hasten this rise in the scale, *e.g.*, an expensive plant built up during a boom may not go out of existence in a depression, but it is operated by as few hands as possible. On the resumption of normal activity there is almost certain to be a lag in taking on more staff, a forced efficiency having been generated during the slack time. If benevolence is ruled out of the question, what inducement is there to restore the worker before he is absolutely necessary? Furthermore, there were many adventitious occupations during the building of the plant which, like scaffolding, are no longer necessary once the plant is built. This applies particularly to boom industries, but something analogous happens in the general rise in the scale of industries. The selectivity is becoming greater as occupations once regarded as a part of the industry come to be regarded as scaffolding. As the plant is perfected this scaffolding is discarded. Logically, mechanism in industry would be expected to hasten this process. This discard is thrown back into lower and lower industries until at last it lands at the bottom of the scale, or rather below the scale—in a large class designated as "unskilled labour not attached to any industry." Even the members of a profession who, out of a job, were forced to work at manual labour, would be "unskilled" labour.

An important line of reasoning emerging from these findings will be discussed in connection with the trend of unemployment. Meanwhile the picture that appears is not yet clear. While the scale described is probably descriptive of what has happened in the evolution of industries, this does not necessarily mean that industries which are now at the bottom of the scale will ascend in time, or even that they were always at the bottom of the scale. This is suggested by the idea that industries at the top are ministering to the necessities of the population while those at the bottom are ministering to sporadic wants—in other words, that the rise in the scale tends to reflect the wants of the population which are supplied. So long as the population have these varied wants it is difficult to see how a rise of those now low in the scale can come about. On the other hand, the wants of the population may change. Conceivably some of these sporadic wants may become necessities and the industry supplying them will then rise.

It is interesting in the study of unemployment by industries to find statistical evidence of what is usually spoken of as "part-time" work and that this evidence is found in some of the higher-scaled rather than the lower-scaled industries. These industries seem to be so strong that on the whole they lose very little time but they spread the lost time among several of their workers. As pointed out in the list of conclusions to Chapter III, there are two kinds of part-time: (1) where the worker is kept attached to the industry in slack times and part-time work is given to several workers instead of a few being dismissed; (2) the part-time work of the person who is taken on only for part-time work, *i.e.*, all the work he gets is part-time work. The second kind is probably much more common than the first, but these part-time workers are usually overlooked except by a census. In reports, annual or monthly, by industries showing their staff, they may or may not be included, *e.g.*, a day's job given to a casual worker may be entered on the books as miscellaneous expenditure, the more or less permanent staff alone being reported as the persons employed. No doubt this has been a source of confusion of thought regarding unemployment. It leaves out of the reckoning a very large body of workers. It has been shown that nearly a third of the wage-earners received less than \$450 in the year preceding the census, their average being \$220, *i.e.*, at best they had only part-time work and not enough to live on. The conclusion seems to be that there is a tendency for these to increase in proportion to the others with the passage of time. It goes without saying, then, that the proper picture of the employment situation is not given when viewed from the standpoint of the industry. From the latter standpoint it is expansion and contraction that are emphasized. It is taken for granted that increase in employment means decrease in unemployment. From the standpoint of the census of workers this does not follow. Decrease in employment may merely mean that a considerable proportion of the workers are a little worse off than before, while the remainder are very much worse off.

The *distribution* of unemployment has been interfered with much more than the *quantity*. An industry as a whole loses time if B loses a great deal of time while A loses no more than before.

If $A = B$ and A loses no time while B loses 28 weeks, then the average loss in the whole industry ($A + B$) is 14 weeks—a marked shrinkage. Now if the industry reports a loss of an average of only 7 weeks, it might be considered as greatly improved, i.e., it was active on an average 45 weeks of the year. Nevertheless A , as before, lost no time while B lost 14 weeks and would still be a subject for relief. Even if A pays this relief and to that extent suffers more in the bad times than in the good, it is clear that B is the greater sufferer. Worse, it is not the same B that lost the 28 and the 14 weeks—this would be assuming that the industry took B back on the resumption of good times. A is not really equal to B . A is growing slowly in the industry and B is shrinking rapidly, i.e., going to industries lower in the scale. The industry loses only 7 weeks instead of 14 partly because more man-weeks were worked but also partly because A is a larger proportion of the industry than before—the industry is doing without its B 's. Consequently in the good times, the B 's, if collected together, would probably be found to lose much more than 14 weeks. In the industry (as distinguished from occupation, etc.) good years are characterized by smaller proportions regarding themselves as having lost any time but this is not because some B 's are converted into A 's but because the industry has selected a few new A 's. This is proved by the fact that as we go up the scale the class losing no time and the class losing time become more and more widely differentiated.

Another point in connection with unemployment in industries has a strong bearing upon what has just been said. Among the tests of the industries was one called in Chapter III "degree of eradication of the independent worker." By this is meant the degree to which the industry has become a body of wage-earners instead of being composed of wage-earners and independent workers, etc. Now it so happens that the higher in the scale one goes the greater is the degree of eradication. For several reasons particularly the abnormal distribution of eradication due to such industries as "farming," the correlation is not high, but such as there is shows that the stronger the industry the more that industry is composed of wage-earners. In considering this fact along with the fact that the higher in the scale the greater the selectivity of the worker, it becomes obvious that the worker thrown out by this selectivity has fewer chances of becoming an independent worker in his own line of occupation. The unemployed farm labourer may become a farmer and thus rise, but in an industry at the top of the scale B has nowhere to go except in a downward direction. Now in the interval between 1921 and 1931 this eradication proceeded at a rapid rate—probably largely in the boom period of 1926-29. The total number gainfully occupied but not wage-earners did not increase as fast as the population, but the wage-earners increased half again as fast. Some of this was due to immigration and some to incomers from the younger age groups but some of it also was due to independent workers becoming wage-earners. Still more was due to persons from the young ages who would normally have formed the ranks of independent workers going into the ranks of wage-earners. The seriousness of this step may be assessed in the light of the above.

UNEMPLOYMENT IN OCCUPATIONS

In Chapter IV a study is made of the incidence of the occupational structure upon unemployment. The main purpose of the chapter is to discover whether there are definite points of difference between the behaviour of the *occupation* and that of the *industry*.

From an *a priori* standpoint the industry is the *demanding* agent, the occupation the *supplying* agent—or if it is preferred, the buying and the selling agents of labour. From this point of view, the occupation is the true home of the worker; it alone has a paternal interest. This is only partly true because, as shown in the preceding section, some—indeed a large part—of the children are owned by neither, in so far as either may be regarded as an effective agent. Still the concept may be considered as sound in the abstract. The occupation sends the worker to many different industries, and when he comes back he is unemployed. He may not stay all his life in the one occupation, but so long as present conditions remain he is apt to stay there longer than in the industry. The difference between his length of stay in the industry and in the occupation is by no means the full measure of unemployment, but this is the measure accepted by the occupation in so far as its interest in the worker extends. The occupation is indeed more paternal than the industry, but it is not perfectly paternal, and the great bulk of unemployment falls upon the worker who is not fathered by either.

Now, is such difference as exists between the two in their interest in the worker sufficient to become apparent in statistical data on unemployment? Be it once more noticed that the census data tell the story of the worker as a member of the population, not the story of either the industry or the occupation.

The same care was taken in Chapter IV as in Chapter III to effect a break-up into homogeneous groups and to rely upon dispersions and correlations rather than averages of large and heterogeneous aggregates. Similar tests of behaviour were also applied.

It was found that the industry and occupation differed in that the data on occupations disclosed what we regard as a fundamental principle, which principle was lacking in the data on industries. Three criteria of unemployment were taken: (1) the proportion not at work on a given day (June 1) as a sample of the year; (2) the time lost during the year by all the wage-earners and those not at work; (3) the proportion of the wage-earning aggregate losing any time during the year, i.e., the relationship between those who lost no time and those who lost some time—the employed class and the unemployed class.

The fundamental principle disclosed by the data on occupations is that the duration of unemployment is predictable from the size of the body who lost some time as compared with the size of that losing no time. Thus if on a given day, M is employed and N unemployed, and if this is a true sample of the year, it follows that N will lose more time than M in that year. This is true but it is not the whole truth. Some of the M's will also lose some time during the year. The larger is N compared to M the more of the M's will lose some time. Conversely if we take the data for the whole year instead of the day, there are two groups of employees—A who lost no time and B who lost some time. *The larger is B compared to A the more time B loses during the year.* We may call this the *direct* instead of the converse situation since it is what we are best able to analyse, but probably the reason will become more apparent if we consider the indirect—the situation on a single day taken as representative of the whole year. *The greater is N in proportion to M on that day, the more liable M is to some unemployment.* Viewed in this way the principle is easily intelligible. The fact that N is unemployed on this day reflects a weakness which is apt to affect the whole body (M + N). M partakes of some of the weakness of N and the whole body has some interest in N.

It is remarkable that this is true of occupations but not of industries. In industries, the fact that on that day N is unemployed means nothing to M. It is reasonable to consider this as a proof that the industry has thrown N out. The only weakness that the industry shows on that day is in containing N which it remedies by discarding him. Some N's may still consider themselves a part of the industry and so report to the census enumerator, but the industry does not consider them at all. On the other hand the occupation regards them still as among its members.

Of course this principle is not entirely lacking in the industries or everywhere present in the occupation, but the distinction between the industry and the occupation in this matter is so great that there is no doubting it (see Chart 5). Where it is lacking in an occupation is where this occupation is really an industry and at or near the top of the scale. The occupation then has ceased to be the seller and becomes the buyer—it has ceased to be paternal. Furthermore, the more highly unionized the occupation, the more this principle is violated.

All this merely reinforces the arguments of the previous section. Indeed this principle alone might well be considered a proof of what was previously said about the relation of the industry to the worker—the discarding of some workers and the difference in class between the *employed* and the *unemployed*, the selectivity and consequent concentration. It should further be said that the more homogeneous the occupation, the more pronounced appears the principle; in addition to taking a cross-section of the occupation a test was made with the forty leading occupations taking them regionally but in the same broad age groups; the correlation between the percentage losing any time during the year and the number of weeks lost by those losing time was higher than when this standardization for age was not made. On the other hand, the more homogeneous the industry—the higher in the scale—the less pronounced is the principle.

This principle was also tested with the occupations data of 1921 and found pronounced. It gives rise to an interesting mathematical calculation bearing upon prediction of unemployment: the chances of a person who loses a certain time during the year to lose this time consecutively. The calculation being of a technical nature will be found in Appendix 1.

It would seem, however, that the principle itself is at least as important as such deduction therefrom. The above interpretation of it is that it reflects, probably is entirely caused by, the permanency of attachment of the worker to the group under which he is found enrolled. As banishing doubt in the matter, it may be said that while it is absent in industry and present in occupation it is also present in age groups. Now the age group may be regarded as rigid; roughly it is almost absolutely the same at the beginning as at the end of the year. There is no discharging of B by his age group. One age group is weak from the employment point of view as compared with another age group, i.e., the whole group is weak, not M strong and N weak. If N is found unemployed on a certain day this shows that the group is weak and M is thereby apt to be unemployed on another day. The M contains a number of B's. If a stronger age group shows a smaller number unemployed on that day than a weaker one, this is simply because the M contains more A's and fewer B's. In neither case are the B's discarded—they are there the whole year.

The fact that an occupation ignores this principle once it becomes an industry deserves more than passing mention. The same appears to be true of the highly-unionized as compared with the weakly-unionized and non-unionized occupations. This is brought out in the array of occupations in Chapter IV but more particularly in Chapter VI on trend. Here we have the history of unemployment and labour unions over a period of years. The unemployment as shown among the reporting members of labour unions does not coincide with the general unemployment situation. This may be attributed to the following fact: as the general unemployment situation becomes worse (affecting the union as well as the non-union workers), the union workers affected drop their membership and when thus dropped are no longer regarded as a part of the union. The result is that in bad times the union unemployment situation *appears* much better than the general unemployment situation—the unemployed are out. On the other hand in good times the labour unions with fuller memberships are apt to suffer from strikes, etc., and show *more* unemployment than the general. It illustrates the same principle of selectivity mentioned in the industries, only this time more or less fictitious. The unions do not seem to be any more paternal than the industries. The distinction is still maintained between A (the permanently employed) and B (the permanently unemployed).

UNEMPLOYMENT AND AGE STRUCTURE

Chapter V is a study not only of the incidence of age structure upon specific forms of unemployment but also of the behaviour with a view to explanation of the general unemployment situation. Thus the conclusions of this chapter help to explain and reinforce the findings of the previous chapters. This is particularly true in connection with two principles already discussed at length, *viz.*, selectivity and relationship of the duration of unemployment of those who lose time to the proportion they constitute of their particular group. In the matter of selectivity, it is demonstrated in the chapter that, in industries especially, the unemployed have a different age structure from the employed. Here also a greater similarity between the unemployed and the employed was found in occupations than in industries.

Coming to the question of functions of age in unemployment many interesting conclusions are reached. The most important would seem to be that there is an optimum age of employment very nearly coinciding with one of maximum earnings. This age is a period of years in middle life (after 40) on either side of which the chances of both employment and higher earnings decline progressively. This is particularly important in view of the present age structure of Canada's population. Owing to the heavy wave of immigration in the early part of this century centering around the age of 24, we have now an abnormal concentration of population in the middle age groups. To this age structure emigration contributed as well as immigration. At a time when employment was scarce (1931) there was an abnormally high proportion of the Canadian population at the fittest ages for employment. This was the situation in Canada as a whole but it was much accentuated in certain regions, for an immigrant population is also a mobile population and as such includes interprovincial migrants as well as immigrants from abroad. Although not mentioned in Chapter V it is probable (this probability is discussed in a monograph on ages and in *Canadian Life Tables 1931*) that a mobile population is more vigorous than a static. If so, this mobility would reinforce, if it does not actually create, the "fitness" disclosed. Ordinarily the resumption of a normal age distribution would in time somewhat modify the situation created

by the age structure and the present tendency of the population to congregate at the fittest ages, but this particular fitness of the mobile may or may not delay the process. Meanwhile the tendency to congregate exists and without a doubt aggravates the hardships of unemployment during the depression. It is more abnormal to have the employable out of work than the unemployable.

This idea is reinforced by another finding in the same chapter, *viz.*, that boys and old men are somewhat out of line in the trend just mentioned (*i.e.*, of a maximum fitness around the age of 40, this fitness declining progressively as we depart from this age). The trend is only true when we cut off the boys and old men. These display individuality. *They are less apt to lose any time but once they lose time they are more apt to lose a long time.* This is interpreted to mean that once they are employed they are more secure in their jobs, but once they lose their jobs they have greater difficulty in finding others and in getting back into employment. This points to a process of elimination of boys and old men from employment. First we have to consider the type of occupations or industries using boys and old men; they would naturally be either particularly suitable to the young or old, or such that these workers can perform the duties as well as those at the fitter ages. If we consider this process of selection and discarding as we go up the scale of industries as referring to whole occupations which are becoming obsolescent, rather than to individual workers, we have a ready explanation of the behaviour of boys and old men in employment. So long as their occupations are used by the industry the old men and boys hold their jobs—lose no time—but once their occupation is discarded they can not find another job. In jobs outside their own occupation they come into competition with the fitter ages. This situation was aggravated by the arrival in Canada of a large body of immigrants at fit working ages who were ready to take on any kind of job especially those not requiring a great amount of skill. The boys were meanwhile at school, kept at school, or prevented from engaging in certain kinds of occupations, by certain regulations, while apprenticeship was discouraged. These inexperienced boys when finally they could engage in these occupations came into competition with older and fitter men and were thus prevented from obtaining a foothold. They were thus confined to obsolescent occupation. There is little or no doubt that the young especially lost ground in the depression but there is just as little doubt that this was merely an acceleration of a process that had been going on for some time. There can be no better proof of this discarding than the finding already discussed, that the employed and unemployed are different age classes and are becoming more and more different, the stronger the employment condition of the industry.

Still to the point is another finding, *viz.*, that the variation between provinces increases towards the older and younger ages. This is interpreted as being due to the fact that the intermediate ages are the ages of greatest mobility. The mobile ages, obviously, go elsewhere for a job when they lose their present job. This is another condition under which the very old and the young fail to obtain a new job once they lose their old one.

Another useful finding was the appearance of a tendency for the unemployment of older persons to be least where the industry was largest—other things being equal. This was probably due to a tendency for the largest establishments to have the greatest variety of occupations, including such occupations as are composed of old men. Then, of course, there is the possibility that the larger establishments are the older and tend to keep on their old hands. This, however, is more doubtful; it depends upon the channel through which the establishment became large—was it through expansion during the recent boom or in the process of time?

THE TREND OF UNEMPLOYMENT

Chapter VI deals with the *trend* of unemployment in Canada. This study encounters real difficulties arising out of the fact that classification of industries and occupations has not been comparable from census to census, and that in the case of outside sources different classifications seem to be used for every different purpose for which data are designed. Data on unemployment were collected by the Census of Canada for the first time in 1921. In the meantime we have had monthly data of unemployment in labour unions, while the Dominion Bureau of Statistics has a Census of Industries and a monthly survey of employment in industrial establishments employing 15 persons or more, including all industries except agriculture, domestic services, professional services and unskilled labour not attached to specific industries.

Mention has been made repeatedly that surveys, whether of members of labour unions or of staffs of business firms reporting periodically, are intrinsically different in their outlook from surveys made by a census. The census is first and foremost the source of information on the *population*—the human or social side of whatever subject it covers. No matter whether the subject appears to refer to an economic or technological feature, the information on this subject obtained by the census is through the medium of the population in the country on the date of the census. Some of this population arrived in the country only a few months before the census. Their employment, their conjugal condition, etc., really reflect conditions in another country, but so long as we accept them as a part of the Canadian population, their condition and location on the date of the census is the only concern of the census. Studies from the census must be sociological, based on aggregates of individuals. On the other hand, data from the other sources mentioned are not "population" data. To the business establishment the number of employees is merely an item comparable to other items. If the number is M one month and the same another, no change has occurred. The real truth may be that in one month M is, let us say $A + B + C$; in another month it is $A + B + D$ and so on, though employment from the establishment's point of view is the same in both months. The census says that the number employed was $A + B + C + D$ and that both C and D lost a month so that during the two months worked there were 6 man-months of actual work for four persons, so that 2 out of a possible 8 were lost, i.e., 25 p.e. unemployment. The establishment's report shows nothing of this unemployment. From the business side the establishment's data are correct; from the human side the census data are correct. In our studies, since they are census studies, the human side alone is dealt with.

Another feature, already mentioned, is that business establishments in their reports are apt so far to forget the human side that casual employees working for a day or two are likely to be entered among miscellaneous expenditures instead of personnel. This is quite logical, but to the census, enumerating as it does every individual, these must be taken into account as well as the others.

It is clear, then, that census information can not be expected to coincide perfectly with information from these other sources. Yet the degree of coincidence is extraordinary. As a matter of fact we find that in industries where there is not much shifting the coincidence is almost perfect. This has a strong bearing upon points brought up in the preceding sections. As we proceed up the scale of industries the coincidence between the two sources of information improves. This could not happen if we were wrong in concluding that the small unemployment shown by the stronger industries was fictitious in the same way as the lower unemployment shown by reporting members of labour unions in depression times is fictitious. The latter show lower unemployment because the unemployed have ceased to be members; the former because into the ranks of their closed membership the unemployed can not hope to enter—they were discarded permanently in the past. The earnings reported by those still claiming attachment to these higher-scaled industries coincided with the wages and salaries reported by these industries as having been paid out. As we go down the scale there is less and less coincidence, signifying that the worker reporting his earnings to the census gave his earnings from all the industries in which he worked during the year while the industry to which he reported himself as pertaining was probably the last industry in which he worked—at any rate he only gave one industry while his total year's earnings were sometimes from many industries.

Our difficulty, then, is that while, from the human side, the census is our true source of information on the trend of unemployment, we are deprived of this source through want of comparable data. We know some things from past censuses, e.g., we know the number of wage-earners, the number of independent workers, the number unemployed on the census date, the number losing any time during the year and the number of weeks lost during the year in 1921 as well as in 1931; but when we compare the data by industries or occupations we are handicapped by incomparability of classification. Without suitable break-ups we can not make fine analyses; we must be content for the time being with averages based on large aggregates. Efforts are being made to have the 1921 data recompiled according to the 1931 code but this valuable piece of work is as yet unfinished.

We are thus obliged to fall back, for our study of trend, on outside sources with all their aforementioned defects. The chief task in dealing with these data was to discover methods by which the human side of these data could be arrived at or estimated. Such an estimate has been made and they together with their bases and the methods used are explained in Chapter VI.

In the case of data derived from estimates, their use, in arriving at conclusions, is hampered by fear of falling into the error of begging the question. The estimates should be based upon the conclusions rather than conversely, and as a matter of fact conclusions otherwise arrived at were used in making the estimates. The legitimate use of estimates would seem to be as a description or barometer to give timely warnings of what is probably happening or about to happen; the fact that such an estimate was subject to a margin of error would not seriously matter providing the errors were casual, since action taken on the warning does not involve exact steps, general directions being all that are needed. On the other hand, if the estimates are to be used to back or formulate theories we are deprived of the use of these theories in making the estimate. In such a case the estimate itself has to be made out of nothing. We can not take an estimate based upon past events to prove that these events occurred.

According to this reasoning we can not take the figures of the estimates in Chapter VI to prove that certain things happened from 1920 to 1936. They are merely descriptive of what was otherwise ascertained to have happened. Care must be taken in describing the trend to avoid such vagaries as have not known facts to back them. They are merely a diagrammatic picture of a collection of tabular material but this material is factual, not estimated. However, certain corrections in this tabular material may be taken as sound, *e.g.*, where labour union figures of unemployment were corrected for the observed trend of a decrease in unemployment according as reporting membership decreased, this correction may be regarded as so strongly justified that the corrected figures should be taken as the accurate figures. This is not an estimate but a measurement.

Remembering that we are observing the above-mentioned rules of caution, the trend itself may now be shown.

Around the date of the 1921 Census and during the year immediately preceding it (this year more properly belonging to 1920 than 1921 as it contained 7 months of it) unemployment was not great, though for the calendar year 1921 it was great. For this reason emphasis is laid upon the fact that the census refers to 7 months of the year 1920 and the first 5 months of 1921. Unemployment grew steadily worse until December, 1921, after which the trend went down temporarily and then became again worse in 1924. From this time it steadily declined till 1926 when conditions were as normal as can be expected.

Now, from immigration reports of both Canada and the United States we have certain phenomena accompanying this trend. We had heavy immigration to Canada (147,502) in 1920, followed by heavy emigration from Canada to the United States in 1924. In the Census of the United States the Canadian born arriving there from 1920 to 1930 consisted of 284,180 who arrived from 1920 to 1926 and 81,827 arriving from 1927 to (3 months of) 1930. Needless to say these *Canadian born* were only part of the emigration from Canada to the United States in those years. In the United States immigration reports we see the occupational composition of the Canadians who emigrated. They were of many different occupations—not specialized occupations reflecting the United States demand during that period. Principally, however, they were young persons who had had no previous occupation. In other words it was a population that was moving.

Now although this knowledge of the immigration and emigration figures was in no sense used in the estimates, the rises and falls of the unemployment above-mentioned correspond to the migration movements. The immigration occurred during low unemployment but kept up until unemployment rose almost to the peak. Emigration then started and it was accompanied (or followed) by decreasing unemployment. This, of course, introduces a widely different concept of unemployment from that generally accepted, *viz.*, that unemployment is merely the opposite of employment. Unemployment only partly declined with increasing employment. As noticed it also *increased with increasing numbers of wage-earners and decreased with decreasing numbers of wage-earners*. Immigration was no doubt accompanied by other inward movements into the ranks of wage-earners—from farms, small owned establishments and from school; emigration was accompanied by return to these sources, so that immigration and emigration were only symptoms of more general movements. The conclusion is that unemployment (in so far as the population is concerned) can be caused by two things (1) decline or shrinkage in business and (2) increase in the number of wage-earners; it can be cured by (1) increase in business activities but only if accompanied by (2) exodus from the ranks of the wage-earners. The lowest point of unemployment would logically be not at the point of greatest business activity but at a point

where activity becomes normal after a period of exodus and before a period of in-rush. Such was 1926. This in no way refers to the economic condition of the employed and unemployed at different periods—it refers solely to their numbers. After 1926 the number of persons employed increased very rapidly with increasing activities but unemployment did not shrink correspondingly because the number of wage-earners increased still more rapidly. As a symptom of this, immigration was resumed on a large scale and, reasonably, other in-movements such as described accompanied immigration. Meanwhile the United States placed restrictions on *their* immigration. This at first did not affect the Canadian born but it affected potential emigrants from Canada who were not Canadian citizens. The number of wage-earners seems to have come to a peak in June, 1930, which was months after employment came to a peak. No great stress should be placed on the exactness of these figures but they are probably close. Employment then shrank rapidly, coming to a nadir in March, 1933, since when it has risen fairly steadily. Unemployment increased at first *pari passu* with the shrinkage in employment but gradually slowed up because the number of wage-earners began to decrease. This is borne out by the 1936 Census of the Prairie Provinces.

Meanwhile let us glance at what was happening on the industrial side. Data on this point are obtained from the Census of Industries which shows the production in dollars and the personnel separately as "salaried" and "wage-earner" staffs. Taking the production aspect of the data from 1926 till the peak in 1929 we find a peculiar sort of increase. If we fit a third degree parabola through the data we notice a deceleration in the increase, gradually followed by a decrease. If such a parabola had been fitted to the data of 1926 to 1928 it would have predicted a decrease in production in 1931 or less than a year later than this decrease actually happened. If such prediction had been made in the spring of 1928 it would have availed nothing as no one would have believed it. None the less such a prediction was possible. It would not be going too far to say that such a prediction can be made in the case of most booms. While production is to all appearances increasing rapidly there is a decelerating force at work which is not readily visible but which comes out in measurements. The process of deceleration thus measured can be relied upon because it is logical. There is no logical basis for believing that any business boom can gain momentum as it goes on—rather it loses momentum, it is certain to. We are apt to be deceived by looking at the absolute figures only. Suppose production in an industry increased from 20 million in one year to 40 in the next, to 65 in the next and to 91 in the next; the size of the 91 compared with the previous 65 would deceive us. Let us take these figures:—

	1st difference	2nd difference	3rd difference
20.....	—	—	—
40.....	20	—	—
65.....	25	5	—
91.....	26	1	-4

It is now apparent that the seeds of decrease are contained in the figures. A series like this would not have to be continued very far before the decrease would become apparent.

Now, while the increase was going on in the case of output there was no commensurate increase in the size of the staff. There was some increase, but at a slower rate, and slowing more rapidly. After making all allowance for error there is no doubt that the output was increasing faster than the personnel.

Let us now see how this affects the employment situation. A period of boom *creates* workers, i.e., it brings rapidly into the wage-earning class persons who ordinarily would either never enter this class at all (i.e., they would either stay out of the country or enter—and stay in—some gainful occupation that would not depend upon wage), or they would enter this class leisurely, maintaining some balance between the number of entrants and the number leaving in the ordinary course of events. Now in boom times not only do existing industries expand abnormally but new industries—some of them adventitious—are created, and it is a matter of record that such industries are short-lived although a few may survive. Besides the new industries thus created there are of course new establishments in existing industries. In these new industries or establishments there is certain to be a greater variety of occupations (doing preparatory work) than when they have reached final working order. This means temporary work in occupations which ordinarily would never attract persons who were fit for anything else. Casual labourer becomes an occupation, and under these temporary conditions some men

would rather follow this than farm or work on their own account. Thus persons crowd into the wage-earning market. Further, the process has the effect of localizing the population, which crowds into certain centres depleting other centres. Now it has been shown that a boom in production contains the seed of decay at a very early stage and long before superficial examination reveals anything but rapid increase. This seed is deceleration. Synchronizing with this deceleration comes completion of jobs, *i.e.*, the *building* part of the expansion and creation is being completed and permanent working conditions are being reached. The result is that the personnel increases more slowly than the output, but the output itself deceives the aspirant worker and in any case there obtains the principle of inertia in accordance with which the applicant still keeps crowding to the industrial centres. The gap between the supply of labour and the demand widens and this spells unemployment before there is any obvious manifestation of a slackening in output. Before the manifestations of slackening are visible in the gross output of the whole country, they are, of course, visible in certain localities and in certain occupations. There follows a long period of, first deceleration, then cessation of growth, then depression. Before the depression is apparent there is an accumulation of unemployed who with the aid of seasonal flurries have probably managed to live since the first invisible slackening. The time lost accumulates as well as the number losing their jobs, for the first to be let out can not expect to re-enter when others are losing their jobs. There are, of course, exceptions to all this in the case of individuals who have lost their jobs but who are fitter than other individuals, but either the amelioration of conditions for these individuals is very slight or it is hidden in such a way that it does not appear in statistics. One of the probable characteristics of these fitter individuals is that they *move*.

The localization first of population then of unemployment by the process mentioned is very important. It had interesting manifestations in the Census of 1931. Taking unemployment by centres, the worst and the best centres (from the unemployment standpoint) were the small ones, the large being average. The cause of this could be definitely fixed—the best centres had decreased or remained stationary in population since 1921; the worst had increased. In other words the best were good because the unemployed had left; the worst because they had remained. There were, of course, individual exceptions, but this was the rule. Some large centres, such as Vancouver, were worse than other large centres, but they had grown very rapidly—they had received among others the workers who had left the small centres. The repercussions of this process since that date may be one of the major events of the period. With the instituting of relief, localities placed restrictions on movements of population. The badly-stricken centres were caught with a large element of unemployed who were prevented by these restrictions from moving freely. The result is one that may be considered serious. In a vast area like Canada the population is, at best, situated in spots instead of being evenly distributed and this leads to intensification of the unemployment situation in any case. A great deal could be said—though little has been—about the influence of this situation upon the consumption of Canada's products. A large body of consumers through immobility of labour further complicated by the question of relief is forced to locate or remain where employment, *i.e.*, production, is least. The greater the distance between the two the greater the cost. This would work against the interests of the producer as well as the consumer. Ideally a population should be spread as much as possible; only in this way can the possibilities of the country be exploited. Congestion of humanity, when looked at in its final analysis, is only a defence mechanism—the banding of the human being against nature as though the latter were an enemy instead of a friend.

SEX IN RELATION TO UNEMPLOYMENT

The chapters already discussed all refer to the sex influence in unemployment. Chapter VII collects these references and adds descriptive and informative material, besides making certain classifications. It would seem that while the sex aspect is important in its results, it is not significant in explaining unemployment. According to the findings of Chapter III, it is not the sex content that causes more or less unemployment in the industry or occupation; the industries least subject to unemployment happen to employ larger proportions of females. Females suffer less from unemployment than males, but this is not because they are females, or because feminized industries suffer less unemployment. The latter suffer just as much; in the same industries females suffer as much unemployment as males. The reason for any apparent

advantage on the part of females is because they are taken on by the industries which are strongest. A further cause gives them a fictitious superiority. Unemployment is the difference between (1) the number of wage-earners and (2) the number employed. If we reduce the first or increase the second we reduce unemployment. Females are more subject to a reduction of the number of wage-earners than are males, principally through marriage. This is brought out in Chapter III. The males are more permanent wage-earners. In all other respects than the nature of the industry and permanency in the wage-earning class, the difference between the two sexes, if any, fails to appear in the data.

It must be remembered that this does not touch the question of whether the male is suffering more unemployment because of female competition, or the national aspect of deferred marriage because of this competition. The census data do not lend themselves to an analysis of this question. Probably a comparison between censuses, providing the classifications were comparable, would bring this out.

JUVENILE UNEMPLOYMENT

Chapter VIII deals with juvenile (under 20 years of age) unemployment in the same way as the preceding chapter deals with sex unemployment. Almost the same principles apply here as were mentioned in the preceding section. An analysis of this aspect of the subject is even more dependent on the trend shown by different censuses than in the case of sex.

REGIONAL UNEMPLOYMENT

Chapter IX collects features on regional unemployment contained in previous chapters, particularly Chapter II where basic data on this subject are given. However, in the matter of the significance of regional distribution as a cause of unemployment, the same thing may be said as was said concerning sex in relation to unemployment. The significance of regional distribution as a result of unemployment has already been discussed in the section on trend.

Probably the most important aspect of regional unemployment is that summarized in Statement XIII, Chapter I. There it is shown that the average unemployment is found in the large centres while the best and worst are about equally distributed among the small centres. Already it has been suggested that the best small centres are those abandoned by the unemployed before the date of the census (although there are some exceptions). In other words, the small centres which showed the worst unemployment were those in which the unemployed were "caught," being still there on the date of the census. This is a feature of booms and their aftermaths—new industries of temporary duration starting up during booms. It is suggested that a study of bankruptcies by the size and recent rate of increase in the population of the centre where they occur would be relevant on this point.

If the wage-earner leaving these small centres drifted only into the large centres, unemployment in the large centres would be rendered worse than normal. We have cases of this kind, e.g., Vancouver. However, the fact that the largest centres are only average is evidence that those leaving the small go elsewhere as well; in any case the aggregate number of unemployed affected by these small centres is very small—it is the large centres that count. The small centres, bad and good, average the same unemployment *per capita* as the large. There is a tendency for different sizes to average the same *per capita* unemployment, only there is greater variety in the small.

It is obvious that regional aspects, i.e., the fixing of responsibility for unemployment upon any geographical area, are complicated by the phenomena just described. They are not really regional, though they can not be dissociated from the regional. The region suffers, but it is as a victim; it is not to any marked extent a culprit.

UNEMPLOYMENT IN RELATION TO RACIAL ORIGIN

This is studied in a special monograph on the origins and nativity of the Canadian people,* and a short summary of the findings of the study is given in Chapter X. The conclusion is that there is no evidence that origin as such has any bearing upon unemployment. The occupation entered, the time in Canada, etc., seem to be the only conditions under which unemploy-

* Hurd, W. B.: *Racial Origins and Nativity of the Canadian People*. Dominion Bureau of Statistics.

ment varies as between different racial origins. Of course if there is an inherent tendency of certain races to drift into certain occupations and certain regions it is difficult to decide whether or not (the occupation, etc., being racial) it is the occupation, etc., or the race that is responsible.

SEASONAL ASPECTS OF UNEMPLOYMENT

The seasonal aspects of unemployment enter into the other studies, but a brief *résumé* is given in Chapter XI. The responsibility of seasonality for unemployment is difficult to fix. If we admit that there are two factors in unemployment, *viz.*, the number at risk and the shrinkage in employment, the question resolves itself into whether seasonal industries create workers or merely employ seasonally those already created. It is difficult to imagine any person leaving a steady occupation to become a seasonal worker unless he were forced out of that occupation. If seasonal industries merely provide work for a wage-earner already created it would seem that they are highly beneficial. The odium attached to seasonal industries in the popular mind is probably due to the fact that seasonal industries are so often cyclical as well, *e.g.*, construction; the seasonal aspect is over-emphasized while the cyclical is forgotten. However, it is the cyclical—with its expansion and contraction—that is really the causal factor.

This raises the question as to whether the worker would be benefitted if these seasonal industries could be made less seasonal, the cyclical aspect being controlled. It is exceedingly doubtful. Certain workers would no doubt benefit, but the main result would be contraction in the number of workers engaged, leaving those who now get some work during the year without any work. It is doubtful whether it is along these lines that a cure for unemployment can be effected.

CONFIRMATION FROM THE 1936 CENSUS

Supplementary data on unemployment in the Prairie Provinces will be found in Volume II of the 1936 Census. A summary with interpretation of this data is given here in Chapter XII.

CONCLUSION

The chief conclusion of this monograph is by way of establishing a fundamental principle in unemployment that is additional to and not necessarily invalidating principles founded on non-census data. This principle concerns the purely human side of the problem, which comes out only in census data, and is bidden in data from other sources. In simplest terms this principle is that there is a class differentiation between the employed and the unemployed and that this is created in part by the industrial structure, in part by extraneous forces. There is also a rational law governing the natural relationship between the employed and the unemployed, which may be stated as follows: if a group of workers is composed of $M + N$ persons and on a certain date M are found employed and N unemployed, then the larger is N in proportion to M , the more liable is M to be unemployed on some other date, *i.e.*, the fact that N is large is a manifestation of the weakness of the whole group, not of N alone, and M and N are continuously interchangeable. This rational law is found in the census data, the condition being that when N is unemployed it does not drop out of the group. In a permanent group like an age group we have the law clearly exemplified; also in occupations which are not industries in themselves and which are not highly unionized. Now industrial and labour organizations act in direct opposition to this law, the stronger these organizations the less operative the law. It can be proved, mathematically that the result of this is to make M a permanently employed class and N a permanently unemployed, the two never being interchangeable. In this case the fact that $M + N$ is strong or weak, is not manifested on a certain date—it merely signifies that N has dropped out of the group and is found in some lower group. The ultimate result is to find one group of workers with few N 's and another group with few M 's. Unemployment as a national problem is concerned with the latter group which is completely submerged and is difficult to diminish by means of increase in employment owing to the tendency of the principle of organization to increase it.

It has just been said that this does not invalidate the view that unemployment is increased by shrinkage and decreased by expansion of business. Obviously a condition of the validity of this position is that business must increase steadily, but this condition is recognized both here and by the economist as probably the greatest factor conditioning unemployment. However, the addendum made herein is that there is a feature in unemployment which the purely economic view does not take into account, *viz.*, that there are unemployed who never appear in the data upon which economic theories are founded; that these form the greater proportion and are the worst off among the unemployed—in short that they form a class which tends to be increased not only by “boom” conditions, but by the steady approach of business toward greater efficiency. The usual view of unemployment assumes that the person who is unemployed to-day may be employed to-morrow, and that in general if A is employed to-day and B not employed the situation will be reversed another day. The present findings are that this is not so.

It is not individuals that are thus discarded but occupations. It is common knowledge that some individuals are more capable of employment than others, and that some may be discarded as unfit. When it comes to whole groups being thus discarded these groups may contain individuals of high efficiency. The specialist in an occupation which is discarded may be the more unfit, by reason of his specialization, for anything but unskilled labour.

The conclusion appears inevitable that there is a growing body of workers who have nothing to depend upon but casual employment, these forming the bulk of the serious cases of unemployment. There is a fallacy in the view that activity which *a priori* increases employment for the working body as a whole will benefit these in the same proportion as it benefits the aggregate of workers. Such activity does not penetrate into all parts of the working body with equal intensity, but rather improves conditions for those already not badly off—at least it effects this before penetrating to the class of unemployed just mentioned.

Now if increase in efficiency and organization increases this class of unemployed, what is the remedy? Efficiency and the interests of the whole must not be sacrificed, but can the same degree of efficiency be reached at a smaller cost? There are two principles that might be more carefully examined than hitherto in this connection: (1) that a concentration of the workers in such a way that in a large country like Canada they are found in spots, not evenly distributed, increases the distance between the producer and consumer and thereby decreases consumption; (2) that any activity which tends to create workers for temporary work is injurious. But another principle must be recognized first, *viz.*, that the Euclidian axiom “The whole is greater than its parts” is not true when applied to humanity. Rather humanity must be looked upon as an aggregate of individuals to each of whom his daily bread is more important than what happens to the whole; moreover, the satisfaction of this need of the individual will determine what will happen to the race.

PART I

INTRODUCTION

Purpose of Study.—The chief purpose of this study is to analyse and interpret the statistics of unemployment compiled at the 1931 Census, the main body of which are contained in Volume VI, Census of Canada, 1931. It is not its purpose to re-state in even general terms what has been written on the theory and causes of unemployment in our modern industrial system nor to review remedies put forward to control this evil. Notes, however, on contemporary opinion are to be found in Appendix 10. It is hoped that this effort to reveal the facts of unemployment in 1931, to measure and appraise their significance, will be of interest and value to those who are concerned with the formulation of policies to relieve unemployment or to prevent its recurrence.

The 1931 unemployment returns furnished information under two heads: (a) wage-earners not at work on the date of the census, June 1, 1931; (b) wage-earners losing time and weeks lost during the period June 1, 1930 to June 1, 1931. The information thus obtained made possible a comparison of unemployment as it existed at a particular date, June 1, 1931, with the unemployment characteristic of a fixed period of time, the twelve months prior to this date.

It is certain that generous allowance for the time element is of importance in estimating "average" unemployment. In order to obtain such an average and at the same time to view unemployment in Canada against the broad background of the past decade, roughly the period of the trade cycle, it is the second purpose of this study (a) to correlate the census statistics on unemployment for 1921 with the 1931 figures and (b) to estimate the volume of unemployment for single years over the intervening period.

Materials used for estimating unemployment over this period, other than census data, include the Dominion Bureau of Statistics' monthly index of employment and the Federal Department of Labour's monthly statement of unemployment as reported by trade unions together with its employment office reports. An explanation of the scope of these supplementary data will be found in Chapter VI.

Before describing in greater detail the nature of the 1931 Census inquiry on unemployment it might be explained why it was decided to collect the unemployment data at the census in the following manner: (a) as of a particular date, June 1, 1931, and (b) as of the census year, *i.e.*, over the twelve-month period prior to that date. In the first place, there was the desire for comparability as between census years—the 1921 data on unemployment having been gathered on the same basis. In the second place, it was believed that the two types of information would serve separate uses.

The June 1 statistics, it was thought, would be valuable, first, as giving a true picture of the unemployment situation on a particular date (as the day chosen, June 1, 1931, was within a week or two of the date that the enumerator completed his census taking), and secondly, as having, therefore, relevance to the basic population figures for the same date. The June 1 census data would also be useful in estimating, by means of a comparison with the census year figures, the effect of the seasonal factor in unemployment. Further, they could be utilized for the purpose of determining the accuracy of the unemployment statistics covering the twelve-month period. Finally, the data for June 1 would be necessary in calculating the trend of unemployment over the decennial period June 1, 1921 to June 1, 1931, and subsequent thereto.

On the other hand, unemployment statistics for the census year ended June 1, 1931 would be more typical of the incidence of unemployment by industry, occupation, age, sex, etc., than the figures for the single date. Secondly, data on unemployment for the year period would be required in calculating time worked and rates of earnings. Thirdly, this type of information would provide a measure of the duration of unemployment as distinct from the rate of unemployment derived from the June 1 inquiry.

It might be stated at this point that what was characteristic of unemployment in Canada over the period June 1, 1930 to June 1, 1931 in respect to differences as between localities, or as between occupations, or ages, or sexes, etc., in the degree to which they were separately subject

to unemployment, may have no direct application to a future time. Undoubtedly there will be differences of degree though many qualities will probably remain unaltered. For example, the relative amount of unemployment as between sexes, or wage-earners at different age periods, or workers in unskilled as compared with skilled occupations, may vary considerably at another date though the nature of unemployment to be greater among males than among females, among older workers than among those at the prime of life, or among the unskilled than among wage-earners in skilled occupations, will likely persist irrespective of variations in the total amount of unemployment from year to year.

Scope of the 1931 Census of Unemployment.—A clear understanding of the scope of the 1931 Census statistics of unemployment is a necessary preliminary to any appraisal of the conclusions arrived at in subsequent chapters. What they comprehend, their potentialities and their limitations are the subject matter of this Introduction. Perhaps a detailed description of the section of the population schedule devoted to unemployment will best serve to define the scope of the unemployment census:—

UNEMPLOYMENT

Class of worker.	Total earnings in the past twelve months (since June 1, 1930).	If an employee, were you at work Monday, June 1, 1931.	If answer to previous question is NO, why were you not at work on Monday, June 1, 1931? (For example, no job, sick, accident, on holidays, strike or lockout, plant closed, no materials, etc.)	Total number of weeks unemployed from any cause in the last 12 months.	Of the total number of weeks reported out of work in column 34, how many were due to—					
					No Job	Illness	Accident	Strike or Lockout.	Temporary Lay-off	Other Causes (See Instructions 184)
30	31	32	33	34	35	36	37	38	39	40

It will be noted that every person working for wage or salary was first asked to report the amount of his earnings over the twelve-month period prior to the census date, June 1, 1931. He was then required to answer a number of questions in respect to unemployment. The first question related to unemployment on the first of June. Was he at work on that day? If not, why not? The reasons that might be given for not being at work on June 1, 1931 were indicated in the inquiry that followed dealing with unemployment over the period June 1, 1930 to June 1, 1931. In regard to this inquiry it will be observed that the wage-earner was first asked how many weeks he had lost during the twelve months prior to June 1, 1931, the same period as was covered by the inquiry regarding earnings, and then how much of this time was lost owing to "no job," to "illness," to "accident," to "strike or lockout," to "temporary lay-off," and to "other causes." In brief, the unemployment inquiry at the 1931 Census was intended to find out the number of wage-earners not at work June 1, 1931 for specified reasons and the number losing time during the preceding twelve months, together with total weeks lost by causes.

While on the subject of the unemployment inquiry, it might be of interest to summarize the Instructions to Enumerators, dealing with unemployment:—

General.—The purpose of the inquiries under the heading Unemployment, columns 32 to 40, (see above) is to elicit information on the problem of the economic insecurity of the worker and to ascertain as far as possible the causes which make for unemployment. The value of the information entered on the schedule under this heading will depend entirely upon the care exercised by the enumerator. If, when he starts the work of enumeration, he finds there is any point upon which he is not clear he should communicate immediately with his Commissioner.

(a) *June 1, 1931.*

Column 32.—The enumerator must make an entry in this column for every person who is recorded with an occupation in column 28 and is reported in column 30 with the letter "W" for "employee" or "wage-earner." The inquiry in this column is to be answered by "yes" or "no" as the case may be. If the entry in this column is "no" there must also be an entry in column 33.

Persons out of employment on June 1, may state that they have no occupation, when the fact is that they have an occupation but happen to be idle or unemployed at the time of the visit. In such cases the entry should be the occupation followed when the person is employed or the occupation in which last regularly employed, and the fact that the person was not at work should be recorded in column 32 and the reason for being out of employment stated in column 33.

In certain occupations, such as the running trades on railways, Monday, June 1, 1931 may be the day when certain men are off duty between runs. In such cases the person is not to be reported as "not at work," consequently the proper answer in column 32 will be "yes." There may be other instances where Monday, June 1 will not be an ordinary working day, the person having worked perhaps on the Sunday previous or overtime and being entitled to Monday as his rest day. For all such cases the proper answer in column 32 will be "yes."

Column 33.—The enumerator should enter in this column the exact reason why the person was not at work on June 1, 1931. The following may be cited as examples:—

No Job.—If the person was not at work on Monday, June 1, 1931 and had no expectation of returning to his or her former job the entry in column 33 should be "no job."

Illness.—In the case of absence from work because of illness, the enumerator should differentiate between the sickness of the person enumerated and that of the members of the family. If the person is idle because of personal illness the enumerator should enter in this column "ill" or "sick" but if the person is not at work because of others who are ill, the entry should be "sickness in family."

Accident.—Careful distinction should be made between personal accident to the wage-earner and that which forces the closing of part or all of the plant where he is employed. If it is a personal accident to the wage-earner the words "injury by accident" should be entered. For closing of plant due to a breakdown the enumerator will enter "machinery broken down," "wreck" or some similar expression. The enumerator should endeavour to obtain a clear statement as to cause and enter it in column 33.

Lay-off.—There are two kinds of "lay-off," voluntary and involuntary, and they should be carefully distinguished. If the worker has taken days for personal reasons, the enumerator will enter in this column "vol. lay-off," but if the person is laid off at the orders of the employers the enumerator will enter the cause, such as "mill closed," "work completed," "plant burned," or whatever the cause of the "lay-off" may have been.

There are many other causes such as weather conditions, floods, lack of materials, supplies or equipment, strike or lockout, etc., and the enumerator should be very explicit as it is better to give too much detail than to have the record incomplete. He should avoid general expressions such as "not at work," "slack work," "no work," etc.

(b) *Time Lost during Year Ending June 1, 1931.*

Column 34.—The enumerator will inquire of every person who was described as an "employee" or "wage-earner" (W) in column 30, the number of weeks out of work for any cause during the twelve months preceding the census date, June 1, 1931. No entry should be made in this column for teachers on annual salary who receive school holidays. The number of weeks in this column must be equal to the total number of weeks entered in columns 35-40. If a period of less than one week was lost from work, the answer should be stated in days with the word "days" written in.

Column 35—No Job.—This inquiry has reference to persons who during some portion of the twelve months preceding the census were out of work and had no reasonable prospect of returning to their former jobs. A "no job" person may be described as one who has no job, nor a promise nor understanding that he or she will be employed. It includes also all idle persons who are planning to change their occupation as well as those formerly attached to plants closed with no probability of re-opening. For such persons the enumerator will enter in column 35 the number of weeks they were out of employment. The term "no job" does not, however, include persons temporarily out of work.

Column 36—Illness.—The entry in this column will be the number of weeks lost through illness of the worker and which resulted in his not going to work at his regular job.

Column 37—Accident.—If the period of unemployment was due to personal accident to the wage-earner, the enumerator will enter in this column the number of weeks out of work because of an accident. When the unemployment was the result of an accident to the plant, mine, factory, etc., the entry will be made in column 39 (temporary lay-off) and not in column 37. Enter only weeks lost through accident to the worker in column 37.

Column 38—Strike or Lockout.—If the worker was idle because the plant was closed owing to disagreement of the management with employees or because of refusal of workers to continue under current working conditions the number of weeks lost will be entered in column 38.

Column 39—Temporary Lay-off.—Generally speaking a "lay-off" is one of two kinds, "voluntary" or "involuntary." A "voluntary lay-off" refers to instances where the employee quits to take holidays, while an "involuntary lay-off" includes instances where a plant is closed for repairs, lack of orders, reorganization, etc., and where the employees may return to work upon the re-opening of the plant, mine, factory, etc. The number of weeks "out of work" which the worker considered as a "temporary lay-off" will be entered in column 39 whether the "lay-off" was owing to his own action or whether due to plant conditions.

Column 40—Other Causes.—If the total period of "unemployment" entered in column 34 is not covered by the causes entered in columns 35, 36, 37, 38 and 39, the enumerator should make diligent inquiry as to any "other cause" and endeavour to obtain a definite statement as to the "other cause" which was responsible for the person being "out of work." The enumerator will enter the number of weeks "out of work" for the "other cause" in column 40 and write the cause in the margin opposite the line on which the entries are made.

When the enumerator has completed making the entries on the schedule for this person he will total the number of weeks entered in columns 35 to 40 to see if they agree with the number of weeks entered in column 34 and if there be a difference he will at once call the attention of the person to the discrepancy and require him or her to make readjustment so that the figures will balance.

The Meaning of Unemployment in the Census.—It will be noted that some of the causes of lost time mentioned in the preceding paragraphs would not be considered as causes of unemployment if by the word "unemployment" was meant idleness due to economic reasons only.

Unemployment in its commonly accepted meaning has been defined by Pigou as follows: "A man may be said to be unemployed when he is both not employed and also desires to be employed. This assumes that the conditions of work as to hours and wages, are not such as to deter a man from seeking employment. It also assumes that the would-be wage-earner is fit and able to work."* The last two sentences make it quite clear that, according to Pigou, such causes of lost time as "strike or lockout," on the one hand, and "illness" and "accident," on the other, are not associated with the causes of unemployment.

Hence the only causes of not being at work on June 1, 1931 or of losing time during the census year that strictly connoted unemployment were "no job" and "temporary lay-off"; though even for the latter a small proportion of the cases was probably due to voluntary lay-off and thus would not fall within the definition of unemployment. (It might be noted that in the United States Unemployment Census of 1930 the number of persons reported as "having jobs but voluntarily idle, without pay" amounted to 84,595, while persons "having jobs but on lay-off without pay, excluding those sick and voluntarily idle" numbered 758,585. Judging from the United States' experience a little more than 10 p.c. of persons on lay-off at the census date were probably voluntarily so.)

However, the census survey, though intended primarily to be a census of unemployment, was really somewhat more comprehensive in scope. The aim was to comprehend all causes of lost time that reduce earning power. With this in view the revision of the unemployment section of the schedule involved a careful check of the consistency of time-loss reported in relation to earnings given and also in relation to the occupation, age and sex of the wage-earner. The earnings test, with due allowance for the influence of occupation, industry, locality, age and sex, was quite thoroughly applied in order to establish the validity of unemployment returns. Thus unemployment in the census has actually implied any loss of time among wage-earners involving a reduction in earnings.

* Pigou, A. C.: *The Theory of Unemployment*, Chap. I.

A final word in regard to the census inquiry on "cause" of unemployment is necessary. The term "cause," as used in the census, was intended to denote the immediate reason for the wage-earner's idleness. It was not expected that the unemployment returns would always disclose the more important or the basic cause or causes of the worker's idleness. On this point Beveridge has expressed the following opinion: "It is manifest from the start, that any one unemployed individual may represent, and commonly does represent, the concurrence of many different forces, some industrial, some personal. A riverside labourer. . . . might be suffering at one and the same time from chronic irregularity of employment, from seasonal depression of his trade, from exceptional or cyclical depression of trade generally, from permanent shifting of work lower down the river, and from his own deficiencies of character or education. His distress could not be attributed to any one of these factors alone. Classification of men according to the causes of their unemployment is, strictly speaking, an impossibility. The only possible course is to classify the causes or types of unemployment themselves."* In subsequent chapters an examination of the census statistics on unemployment will be made with the object of measuring the influence of such causes as seasonal fluctuations in business activity, the trade cycle, and so on, upon the volume of unemployment in Canada.

Gainfully Occupied and Wage-Earner Defined.—It has been said that the census of unemployment covered only persons working for a wage or salary whether such a person be the general manager of a bank or a day labourer. In other words, it was confined to "wage-earners." The wage-earning class represented 2,570,097 persons in 1931, or about 24.80 p.c. of the total population and 65.44 p.c. of the population in gainful occupations. A "gainful occupation," according to the census, is an occupation by which a person earns money or money equivalent. Children working at home on general housework or chores were not considered as gainfully occupied. Similarly women doing housework in their own homes without wages, and having no other employment, were not included among the gainfully occupied. It should be added that the occupation inquiry applied only to persons 10 years of age and over.

The other classes, which together with the wage-earners, compose the gainfully occupied population are:—

- (a) "employers," i.e., those who employ others in the conduct of their business;
- (b) "own account" consisting of persons pursuing their profession, trade or other occupation independently and who do not engage paid assistants; and
- (c) "unpaid family workers" or persons employed without money payment on work which contributes to the family income.

The relative importance of the wage-earning class in the composition of the gainfully occupied varies considerably as between localities, industries, occupations, etc., and this phenomenon is important in any analysis of unemployment in which its incidence by locality, industry, occupation, etc., is examined. Hence, a separate chapter has been devoted to a general survey of the gainfully occupied by locality, industry, occupation, etc., in relation to industrial status, i.e., in relation to the relative proportion of wage-earners, employers, own accounts and unpaid family workers, as a preliminary to the analysis of unemployment among the wage-earning element in the population in gainful occupations.

The unemployment census, therefore, did not include persons reporting such occupations as "farmer," "manufacturer," "dealer," "contractor," all of whom were employers or on own account. Secondly, it did not cover a large proportion of the persons engaged in such professional occupations as "lawyers," "doctors" and "dentists," as only a relatively small number in these professions were employees on salary. The great majority were reported as on their own account. Likewise, most of the gainfully occupied in such primary pursuits as hunting and fishing were on own account. Similarly, a substantial proportion of persons reporting themselves as "barbers," "blacksmiths," "tailors" and "shoe repairers," operating small shops, were returned as on own account. A smaller but nevertheless a significant percentage of males in the building trades were "own accounts." Thirdly, the unemployment census did not include unpaid "farm labourers" most of whom were farmers' sons, the "sales clerk" working without pay in his father's store, or the domestic receiving no wage but exchanging her services for board and room. Members

* Beveridge, W. H.: *Unemployment: A Problem of Industry*, p. 3. Longmans, Green & Co., Toronto, 1930.

of religious orders reporting an occupation but not in receipt of salary were likewise not included. (A complete list of the occupations which were excluded in whole or part from the census of unemployment, and the number of persons affected, will be found in Table 17, page 317.)

Procedure Governing Special Classes.—Certain decisions made during the revision of the schedules concerned classes of persons the unemployment census should or should not include.

In the first place, inmates of institutions at the date of the census were not counted as wage-earners even if returned as having some paid occupation therein.

Secondly, persons 70 years of age and over reported as wage-earners unemployed for the full twelve months prior to the census owing to illness or accident were treated as unemployable and were not included in the unemployment figures.

Women living at home reporting themselves as dressmakers, seamstresses, etc., and earning very small sums of money during the census year were not included where it appeared that the economic position of the family rendered it unnecessary for them to be continuously seeking employment.

In the case of young persons not attending school and for whom no occupation was reported, an attempt was made by means of an additional inquiry to the enumerator to ascertain whether such persons really had no gainful occupation, or whether they had been previously employed but were now remaining at home owing to there being little prospect of employment elsewhere. The result of this inquiry, especially as it affected boys 16 years and over, was to add to the number having an occupation and reporting "no job" at the date of the census. No doubt there was not the same economic necessity for many of these boys living at home to be continuously in search of employment as for unemployed heads of families, and as a consequence the period of unemployment they reported was probably longer than it might otherwise have been had they been wholly self-dependent. Incidentally, juveniles who appeared to have just left technical or commercial schools frequently reported occupations, as, for example, "automobile mechanic" or "stenographer," even though they may never have had a job, because they could state some definite occupation for which they had been prepared while at school. Those who reported no industry in which they might have been employed were not counted among the wage-earners.

Furthermore, in dealing with the counting of time lost as distinct from persons, short periods of time-loss (not more than 8 weeks) owing to illness or accident reported by salaried classes were disregarded as it was considered that such idleness would not involve any reduction in earnings. Similarly, where it was possible to determine that brief lay-offs for such classes represented holidays, and earnings appeared unaffected by such a lay-off, this time-loss was not counted.

It is not possible to say whether odd days of unemployment suffered by wage-earners working on a part-time basis were usually taken into account in reporting the total number of weeks of time-loss incurred during the period June 1, 1930 to June 1, 1931. Persistent part time, on account of its noticeable effect on earning capacity, was more likely to have been remembered. However that may be, there was no information on the schedules by which involuntary part-time employment could be distinguished for the purpose of applying rules of revision or coding procedure.

Problems of Interpretation.—Difficulties encountered in the attempt to interpret the unemployment statistics of the 1931 Census might be discussed in some detail here because they influence the conclusions reached in this study. They were largely the result of known but non-measurable inaccuracies in the census data. Some of them originated in faulty reporting or careless enumeration, others were due to errors that crept in as the raw material was put through revision, coding and punching stages preparatory to the compilation of the final tables. Many of these mechanical errors, and certainly any types that were sufficiently numerous to have some statistical significance, were removed during the process of tabulation. It was with the types of error inherent in the original material as it came in from the field that more difficulty was met. An effort was made to minimize the effect they might produce on the validity of the final figures. This was partially successful.

What types of error were found in the unemployment part of the schedules? There were inaccuracies in reporting the amount of unemployment, and additional ones in reporting its cause. Evidence of the former occurred where there was lack of consistency between occupation, amount of annual earnings and weeks of unemployment. Sometimes occupation or earnings

were at fault but inquiry frequently proved that the error was in the unemployment column of the schedule. The individual in reporting unemployment may have over-stated, more often than not, the total number of weeks lost during the census year, but this tendency to over-statement, if it did exist, was more than counterbalanced by under-enumeration of unemployment by the census taker. Where there was persistent neglect in enumerating unemployment, and these cases were not numerous, a lengthy inquiry was sent out to the enumerator for more complete information. Except in certain districts it is believed that original deficiencies in the census material in respect to the amount of unemployment recorded were largely accounted for during the revision of the population schedule. In boarding-house districts of larger cities, however, where the enumerator frequently secured the information from lodging-house keepers there was more evidence of incomplete and inconsistent enumeration than elsewhere. Wholly satisfactory revision of the schedules from such districts was impossible. Particularly was this true where language difficulty was encountered, in districts in which the foreign-born predominated.

It has been said that individuals may have over-stated more often than not the total number of weeks lost during the census year. It is not our purpose to examine this contention here though it might be noted in passing that it is questionable whether this was true for those who had experienced several brief periods of lay-off during the year. Recurrent short time would not be easy to remember *in toto*. However, we do know that in some rural areas weeks of unemployment were reported which should not have been accepted by the enumerator as time lost. This over-enumeration of lost time occurred chiefly in Northern Ontario and Quebec where it was customary for farmers' sons and other labourers on farms, who had earned stated sums of money at pulpwood cutting, road work, etc., during part of the year, to report as weeks unemployed the time spent on the home farm. In these alternative employments they had received fixed money payments and so probably concluded that the period of the year spent on the farm should, from the point of view of money earnings, be considered as lost time. For the same reason the time-loss shown for farm labourers is too high even in other provinces. Furthermore, in the case of those farmers' sons who were at home at the time of the census because of lack of employment in nearby cities, loss of time reported probably covered the whole period they had been home even though they were more or less fully employed on the farm.

It was apparent that many enumerators had not properly distinguished individual causes of unemployment. "Temporary lay-off" was often confused with "no job." What was seasonal unemployment in such industries as "mining," "clothing," etc., was probably as often reported "no job" as "temporary lay-off." On account of the depressed condition of business it is true that some who at first believed they were on lay-off may have subsequently learned that they had no job. Nevertheless, the inconsistency in enumeration for a specific industrial area, say, a mining district, in the distribution of unemployment between "no job" and "temporary lay-off" would suggest that some enumerators endeavoured far more than others to determine what unemployment was due to a temporary lay-off at the mine and what was actually caused by the worker losing his job.

It would also appear from comparison of 1931 results with 1921 figures that time-loss due to "illness" was not reported as such in 1931 in numerous cases where prolonged unemployment owing to "no job" had been incurred. Time-loss due to "illness" was absorbed in "no job" in these cases. In 1921 "illness" occupied a relatively more important place as a cause of lost time owing to the fact that the average period of unemployment was much shorter than in 1931. In 1921, 10 p.c. of all wage-earners and 30 p.c. of those losing time gave "illness" as the cause, as compared with 4 p.c. and 11 p.c. respectively in 1931.

It has been stated that incomplete enumeration of unemployment was pretty generally accounted for during the revision of the schedules. The same can not be said with regard to errors in the enumeration of causes of unemployment or lost time. In interpreting the census results allowance has to be made for inaccuracies of this kind.

Another type of error in the census statistics of unemployment, which it has not been possible to remove, concerns the relationship of time-loss to the occupation or industry of the wage-earner. At the census persons in gainful occupations were asked to report their usual occupation. Wage-earners unemployed at the date of the census returned either their usual occupation or the occupation and industry in which last regularly employed. They were not required to state how much of their time-loss during the preceding twelve months was due to loss of employment in other

occupation or occupations than that given the enumerator at the date of census. The same was true as regards industry. Hence, the amount of unemployment shown for certain occupations and, more particularly, for certain industries is not strictly accurate. The expression "more particularly" is used for it is generally true that a man is able to change his *place* of employment, i.e., his industry, more readily than his trade or occupation.

As an example of this type of error in the unemployment figures one might refer to the time-loss appearing under "Municipal service" in the industry tables. It is rather high as compared, say, with "Federal and Provincial service"—total males in the former averaging 8.3 weeks of lost time as against 1.8 weeks in the latter. Putting it in another way 47,986 male wage-earners in "Municipal service" lost 396,459 weeks during the census year while 52,986 males in "Federal and Provincial service" lost only 96,438 weeks. This disproportionately heavy unemployment in municipal service is accounted for by the fact that men on city relief work were commonly enumerated as working for the "City." Hence the lost time they had contracted during the census year was classified under "Municipal service" in the census tables though it was caused by lack of employment in a number of other industries. Similarly, unemployment under "Construction" is perhaps too high as it includes the time-loss reported by wage-earners on public works projects undertaken as relief measures necessitated by lack of work in other industries.

To a much less degree than in the cases related, but nevertheless to an extent worth mentioning, total wage-earners and total unemployment for industries seasonally active at the date of the census are excessive to the degree that they include weeks of unemployment lost by wage-earners not usually connected with such industries. The opposite was true of industries whose slack season occurred at this time. This subject will be more fully dealt with in the chapter *Unemployment in Relation to the Industrial Structure*.

Owing to the fact that time-loss during the census year was linked to the industry or occupation reported to the enumerator at the date of the census, types, as well as amounts, of lost time were sometimes incorrectly associated with one industry or occupation rather than with another. This was obvious where such a cause of lost time as "strike or lockout," for example, was reported by wage-earners employed at the date of the census in industries or services not subject to a stoppage of this kind. This type of error was readily detected so it is not expected that interpretation will be rendered more difficult as a result of a few defects of this character in the unemployment statistics of the census.

Other imperfections in the census data on unemployment that must be taken into account in the analysis and interpretation of the figures mainly concern specific occupations and industries. These imperfections are the result of inexact descriptions of the occupation and, to a lesser degree, the industry of the wage-earner.

It should be recalled that the enumerators were dependent chiefly upon housewives for the descriptions of occupations of earning members of the family. Consequently vague and general answers to the census inquiry dealing with occupation and industry were sufficiently common to cause some inaccuracy in the figures for certain classes. For example, the number of "labourers" recorded at the census not including those in agriculture, mining, fishing and logging, was undoubtedly greater than would have been the case had a more exact enumeration of the occupations of wage-earners been obtained. Out of a total of 2,022,260 male wage-earners 422,284, or a little over one-fifth were reported as "labourers," and this figure does not include the number in primary industries. In Quebec and New Brunswick the percentage was even higher—24.63 and 34.33 respectively as compared with 20.88 p.c. for Canada. The higher percentage in these provinces was in no small measure due to the common occurrence of the vague occupational term "*ouvrier*" on the schedule from districts where the enumeration was in the French language.

Incidentally, a substantial proportion of the "labourers" were really casual labourers. Many of these when asked by the enumerator to give the industry in which they were employed at the date of the census, or, if unemployed, the industry in which usually employed, could name no definite industry. Entries such as "odd jobs," "general" and other vague returns were common enough in the industry column of the population schedule. Those who were thus enumerated were likely casual labourers in the majority of cases. Industrially they were assigned to the class "unspecified" in industry tables. Of the 165,172 males in this class probably 150,000 were fairly casual labourers. This accounts for the high percentage of unemployment in the industry class, "unspecified," as will be noted in the chapter dealing with the incidence of unemployment by industry.

From what has been said in regard to "labourers" it will be apparent that analysis of the incidence of unemployment by occupation or by industry can not disregard the factor of imperfect reporting of the occupation-industry inquiry on the part of wage-earner heads or members of their households. It is not intended in this Introduction to specify in detail the occupations or industries to which such cautions apply; these will be dealt with in the chapters devoted to the analysis of unemployment by (a) industry and (b) occupation. It is sufficient here to draw the reader's attention to a type of imperfection in the census data on unemployment that will present a problem of some proportions when a more elaborate interpretation of the census statistics is required.

Occupational vs. Industrial Classification of Wage-Earners.—In a number of summary tables appearing in subsequent chapters, wage-earners have been classified according to industrial and occupational groups. The terminology used to describe the groups or divisions into which industries or occupations have been arranged is much the same, though the meaning attached is somewhat different. The term "manufacturing," for example, will be found in both industry and occupation tables. Under this group in the industry tables are classified all persons employed by manufacturing firms whether engaged in the production, sale or transport of the product, bookkeeping, or other occupations associated with the industry. On the other hand, in the occupation tables only such persons as were following so-called "fabricating" occupations, i.e., directly engaged in the process of manufacture or repair, are included under the group "manufacturing," and all persons in these occupations are thus grouped irrespective of whether they were employed in factories or in commercial service, etc., establishments.

It might be mentioned that persons in clerical occupations have been assigned a separate group in the occupation tables, while "labourers" in all but the primary industries have been brought together in a single group. No attempt has been made to classify the latter occupationally under group headings on account of the vagueness of the term as a description of the nature of the work performed, nor does the industry in which employed always indicate the type of work done. A labourer in a furniture factory, for example, may not be following a wood-working occupation nor a labourer employed by a steam railway, a transport occupation.

CHAPTER I

ACCURACY AND PERMANENT VALUES IN CENSUS DATA ON UNEMPLOYMENT

Introduction.—It is obvious that to arrive at any valid conclusions, we must first establish the fact that there are permanent values to be found in unemployment data, both current and periodical as obtained at the census. Without such permanent values current data are no more valuable than periodical. The popular conception that census data are out of date in a year or two, if sound, applies almost as well to monthly data, for the changes implied in such a conception take place every moment. The bug-bear *timeliness* must be removed if we are to obtain full results from statistics. That careful study and planning must be sacrificed to the popular demand for an early appearance of figures is one of the chief difficulties statistics has to face. Statistics should be independent of journalism except in so far as the latter's demand is for the day's contribution to knowledge.

PART A—RELIABILITY* OF CENSUS DATA

No progress can be made in investigating permanent relationships in the census data on unemployment until it is established that the data are reliable. The source of doubt is as follows: on June 1 of the census year, the person (if a wage-earner) is asked whether he was at work on June 1. He is also asked how many weeks he lost in the year up to that date. Now there can be no question that he (or his wife) is able, if willing, to tell the truth as to the June 1 status, but it has been doubted that he is able to remember the number of weeks he lost during the year. One point must immediately be conceded. The individual is not able (or is not willing) to state *exactly* the number of weeks lost. This is evident from the fact that his answer tends strongly to even numbers. However, the census is not concerned with individuals but with aggregates. If the information is required for any particular individual it is not difficult to obtain it from local records. The question of census reliability refers only to aggregates, while it is important to know also how small the aggregate may be and still be reliable. The immediate task, then, is to investigate these two questions.

A Priori Expectations of the Data of Idleness on June 1.—First of all it is taken for granted that the answer to the question "Were you at work on June 1?" is reliable. There is no reason for a wrong answer except a deliberate falsehood or the carelessness of an enumerator. Next, the purpose of such a question is to obtain a cross-section of the year, *i.e.*, a sample. If June 1 were a perfectly representative sample of the year then the percentage idle on June 1 would be the average percentage idle during the year. Further, if we regarded the specific date June 1 as perfectly representative of the week around that date, then the percentage idle June 1, say, 18 p.c., would correspond to 18 p.c. of 52 weeks or an average 9.36 weeks idle during the year on the part of all wage-earners (*i.e.*, of those losing some and those losing no time). Now a number of wage-earners replied to the question "How many weeks did you lose during year?" "None." This must be interpreted as "no weeks" not "no time." That is, a day or two lost here and there would not, in all probability, be recorded in the person's mind. This gives us another figure, *viz.*, percentage (of the wage-earners) losing "some" time, so that we have three sets of data: (1) percentage (of the wage-earners) idle, (week of) June 1; (2) percentage losing any time (*i.e.*, any weeks) and (3) number of weeks lost by those losing time, from which we deduce the average number of weeks lost by all wage-earners as well as of those losing time. These sets of data are compiled by industries, occupations, ages, etc., each occupation, etc., being by provinces, cities, etc.

Now take the two sets—*idle on June 1* and *losing any time*; still suppose 18 p.c. to have been idle on June 1, *i.e.*, on a specific date, and suppose 50 p.c. of the wage-earners lost some time during the year. What are the probabilities that those who were idle at any time during the year were idle on June 1? If everybody lost some time during the year, then the probabilities that a certain individual percentage found idle at any time was the one found idle on June 1, would be 18/100; but since only 50 p.c. lost time the probability is larger, *viz.*, 18/50 since the 18 could only come out of the 50 idle. But the chance of a person being idle on a specific date depends upon the

* It must be definitely understood that "reliability" here refers only to the question of whether a person can report the weeks lost. It has nothing to do with possible inaccuracies to which unemployment data are subject in common with all other census data.

number of weeks he lost during the year. If the person losing time, lost, say 18.72 weeks in the year, then the chance that he was idle a specific week, say the week of June 1, would be 18.72/52. Consequently 18/50 should be equal to 18.72/52, i.e., the percentage idle June 1, to the percentage losing any time should be the equivalent of the average number of weeks lost by those losing any time to 52 weeks, i.e.:—

$$\frac{\text{p.c. idle June 1}}{\text{p.c. idle any time}} = \frac{\text{average weeks lost by idle}}{52}$$

If this probability is tested with a large number of actual sets of data and found to hold, the reliability of the answer to the question "How many weeks lost?" is established; for this equation could not possibly be satisfied by a random answer as to weeks lost nor can we conceive any individual or enumerator using the equation to calculate his answer.

The equation as stated above could only be true if June 1 was a perfect sample of the year, i.e., if the week of June 1 was a perfectly representative week, but we know it is not, for there are not only seasonal variations but also trends, e.g., employment was decreasing and unemployment increasing throughout the year ended June 1, 1931. The trend was somewhat different in the year up to June 1, 1921. Consequently on June 1, 1931 unemployment would be expected to be greater than the average of the year while in 1921 it would be expected to be about the same as the year. So long, however, as the trend throughout the year was constant or in so far as it was constant the idleness of June 1 would be a fixed multiple (or fraction) of the idleness of the year—say, B. We may call this B the constant bias. The equation now becomes:—

$$\frac{\frac{1}{B} \times \text{p.c. idle June 1}}{\text{p.c. idle any time}} = \frac{\text{average weeks lost by idle}}{52}$$

If this equation is satisfied by the actual data under different conditions, then the reliability is established even more firmly than if the bias had not existed, for it would be very improbable indeed that the average person would make this calculation before answering the enumerator.

We do not expect perfect agreement between the two sides of the equation, for besides the constant bias we expect individual variations between occupations, etc., e.g., in the case of some occupations, June 1 would be better than the average of the year; in others worse. Consequently we expect an error, but if this error is calculable, small, and found to be mainly due to idiosyncrasy in occupations, etc. (i.e., if the occupations showing less unemployment during the year than that calculated by the equation are found to be those which are usually worse in June than at other times, while those showing more unemployment in the year than that calculated are found to be those usually better in June), then these errors instead of indicating unreliability in the data, establish the reliability still more strongly since the probability of a calculation by the enumerated or enumerator so nice as to bring out these points would be practically nil.

Let us now add another condition that must be satisfied to establish reliability. Persons change their occupations, industries, etc., during the year. Furthermore, current data on the employment in industries as reported by these industries month by month do not necessarily refer to the same persons as those reporting themselves belonging to that industry on a specified date like June 1 of the census year. Those reporting on this specified date give their history for the year, and when they state that the industry in which they are working is, say, the textile, they mean that this was their industry on that date. Certain persons who were reported by the industry on a certain other date may either be dead, in another industry or have left the country by June 1; while certain persons reporting on June 1 may have been in another industry, have since come into the country, been unemployed or not come of age for employment on the other specified date. Consequently perfect agreement can not be expected between the current reports and the census data and any seeming discrepancy does not reflect upon the reliability of either. If, then, the more stable industries or occupations show better agreement than the less stable, the less seasonal than the more seasonal and so on, this goes further to establish reliability than if perfect accord were found in all cases.

Tests of Reliability of Year's Statement of Idleness.—The task to be undertaken is to investigate whether the above conditions are fulfilled by the census data. The method that will be used is to attempt to calculate the weeks lost during the year from the data on June 1. If the calculation is satisfactorily close, the year's data will be considered reliable and June 1 will be considered a representative cross-section to the extent of the approximation. The nature of

the divergencies will be examined and if found to conform to certain conditions mentioned, viz., the seasonal nature of the industry, occupation, etc., will be regarded as further evidence of reliability. Moreover three independent witnesses will be called in: (1) 1921 (census) data will be calculated by means of the formula derived on the basis of the 1931 data. If the divergence of the results from the reported year's data for 1921 turns out to be proportional to the bias between June 1, 1921 and the year 1921, and that between June 1, 1931 and the year 1931, this will be considered a very strong point in establishing reliability. (2) Monthly reports of firms will be taken to check the bias of the June 1 month as compared with the year. (3) The unemployment shown by the labour unions as reported currently in the *Labour Gazette* will also be used as a check.

Duration Calculated from June 1 Data.—At the outset it must be made clear that reliance is not to be placed on the existence of a correlation. A correlation between June 1 and the year's figure is almost inevitable for reasons which will presently be set forth. Reliance will be placed entirely upon the closeness of the calculation. If June 1 is found to be nearly as closely representative of the year as an actual random sample of 100 persons, or if the number of days' error in calculating the year's idleness from June 1 is not great enough to matter one way or the other, this will be regarded as establishing reliability, especially if the errors are distributed

I.—PERCENTAGES NOT AT WORK JUNE 1, 1931 CORRELATED WITH AVERAGE NUMBER OF WEEKS LOST BY ALL MALE WAGE-EARNERS DURING THE YEAR, BY INDUSTRY, OCCUPATION AND AGE GROUPS, CANADA, BY PROVINCES, YEAR ENDED JUNE 1, 1931

No.	Industry Group	P.C. Not at Work June 1, 1931	Average Weeks Lost during Year			Occupation Group	P.C. Not at Work June 1, 1931
			Actual	Calculated	Error		
PRINCE EDWARD ISLAND							
1	Agriculture.....	3-01	1-89	2-49	-0-60	Agriculture.....	3-01
2	Forestry, fishing, and trapping	5-76	4-65	3-65	1-00	Fishing and logging.....	4-67
3							
4	Manufacturing.....	3-97	2-54	2-90	-0-36	Manufacturing.....	5-00
5	Electric light and power.....	4-55	3-07	3-14	-0-07	Clerical.....	4-47
6	Construction.....	13-53	9-75	6-91	2-84	Construction.....	14-55
7	Transportation.....	7-94	4-70	4-56	-0-14	Transportation.....	9-85
8	Trade.....	4-33	2-31	3-05	-0-74	Commercial.....	3-19
9	Finance.....	3-91	0-85	2-87	-2-02	Finance.....	3-95
10	Service.....	4-73	2-28	3-22	-0-94	Service.....	5-53
11	Unspecified.....	22-75	14-11	10-79	3-32	Labourers.....	17-00
NOVA SCOTIA							
1	Agriculture.....	10-20	5-46	5-51	-0-05	Agriculture.....	10-16
2	Forestry, fishing, and trapping	18-57	7-65	9-03	-1-38	Fishing and logging.....	18-11
3	Mining.....	36-41	19-80	10-52	3-28	Mining.....	38-79
4	Manufacturing.....	18-57	11-24	9-16	2-08	Manufacturing.....	17-53
5	Electric light and power.....	8-01	4-59	4-59	-	Clerical.....	8-05
6	Construction.....	28-79	14-44	13-32	1-12	Construction.....	25-24
7	Transportation.....	15-81	7-37	7-87	-0-50	Transportation.....	13-51
8	Trade.....	7-92	4-30	4-56	-0-26	Commercial.....	6-32
9	Finance.....	3-97	1-66	2-90	-1-24	Finance.....	3-01
10	Service.....	7-63	4-35	4-43	-0-08	Service.....	7-10
11	Unspecified.....	44-18	18-15	19-79	-1-64	Labourers.....	36-13
NEW BRUNSWICK							
1	Agriculture.....	14-49	7-63	7-30	-0-33	Agriculture.....	14-58
2	Forestry, fishing, and trapping	36-08	15-87	10-76	-0-89	Fishing and logging.....	37-20
3	Mining.....	10-60	12-31	8-20	4-11	Mining.....	17-20
4	Manufacturing.....	17-05	9-98	8-39	1-69	Manufacturing.....	14-60
5	Electric light and power.....	10-82	3-69	5-77	-2-08	Clerical.....	6-57
6	Construction.....	30-03	15-44	13-84	1-60	Construction.....	21-19
7	Transportation.....	13-05	6-42	6-96	-0-54	Transportation.....	11-20
8	Trade.....	7-38	4-06	4-33	-0-28	Commercial.....	5-16
9	Finance.....	2-45	1-17	2-26	-1-09	Finance.....	1-30
10	Service.....	7-18	4-20	4-25	-0-05	Service.....	8-85
11	Unspecified.....	48-46	19-89	21-58	-1-69	Labourers.....	39-75
QUEBEC							
1	Agriculture.....	11-49	5-77	6-06	-0-29	Agriculture.....	11-21
2	Forestry, fishing, and trapping	39-89	13-61	17-98	-4-37	Fishing and logging.....	40-05
3	Mining.....	31-07	12-95	14-28	-1-33	Mining.....	33-13
4	Manufacturing.....	15-50	8-77	7-74	1-13	Manufacturing.....	16-21
5	Electric light and power.....	9-53	4-38	6-23	-0-85	Clerical.....	7-63
6	Construction.....	29-42	10-44	13-59	2-85	Construction.....	23-99
7	Transportation.....	12-84	7-21	6-62	0-59	Transportation.....	12-10
8	Trade.....	10-31	5-49	5-56	-0-07	Commercial.....	8-63
9	Finance.....	5-50	2-53	3-54	-1-01	Finance.....	4-24
10	Service.....	10-58	5-96	6-67	0-29	Service.....	8-72
11	Unspecified.....	47-85	21-06	21-33	-0-27	Labourers.....	34-40

1 No mining in Prince Edward Island.

according to the conditions set forth above. We ought to be able to ascertain not only whether the year's figures are at all reliable, but also *how reliable* they are. Going back to the equation:—

$$\frac{\frac{1}{B} \times \text{p.c. idle June 1}}{\text{p.c. idle any time}} = \frac{\text{average weeks lost by idle}}{52}$$

The reciprocal of B is used because it is desired to express the bias in terms of June 1, instead of the year. This describes the first *a priori* condition that must be satisfied. Now multiplying across we have: $\frac{52}{B} \times \text{p.c. idle June 1} = \text{p.c. idle any time} \times \text{average weeks lost by idle}$.

But the right side of this equation is the average number of weeks idle for *all* the wage-earners. Let $\frac{52}{B} = K$, p.c. idle June 1 = x and average weeks idle for all wage-earners = y ; then $y = Kx$.

Let us then assume a linear equation $y = A + Kx$ and fit this by least squares to the data of the Census of 1931. Three sets of data were taken, viz., 98 industry groups, 98 occupation groups and 99 age groups. The percentage idle June 1, and weeks idle for all wage-earners in these groups with the description of the groups are shown in Statement I.

I.—PERCENTAGES NOT AT WORK JUNE 1, 1931 CORRELATED WITH AVERAGE NUMBER OF WEEKS LOST BY ALL MALE WAGE-EARNERS DURING THE YEAR, BY INDUSTRY, OCCUPATION AND AGE GROUPS, CANADA, BY PROVINCES, YEAR ENDED JUNE 1, 1931

Average Weeks Lost during Year			Age Group	P.C. Not at Work June 1, 1931	Average Weeks Lost during Year					No.
Actual	Calculated	Error			Actual (10 years and over)	Calculated (10 years and over)	Error (10 years and over)	Calculated (16 years and over)	Error (16 years and over)	
PRINCE EDWARD ISLAND										
1-91	2-19	-0-28	10-13	-	1-85	2-85	-1-20	-	-	1
3-78	2-92	0-86	14-15	4-17	4-01	4-39	-0-38	-	-	2
			16-17	8-76	6-59	6-09	0-50	4-55	2-04	3
3-66	3-07	0-59	18-19	8-54	5-35	6-01	-0-66	4-46	0-90	4
1-89	2-84	-0-95	20-24	7-74	5-01	5-71	-0-70	4-07	0-94	5
10-65	7-27	3-38	25-34	6-56	4-23	5-28	-1-05	3-50	0-73	6
3-89	5-20	-1-34	35-44	5-50	3-51	4-89	-1-38	2-99	0-52	7
1-72	2-27	-0-55	45-54	6-42	5-35	5-23	-0-88	3-43	1-12	8
1-37	2-61	-1-24	55-64	10-55	5-95	6-75	-0-80	5-41	0-54	9
2-07	3-30	-1-23	65-69	11-89	6-49	7-25	-0-76	6-06	0-43	10
11-07	8-35	2-72	70 and over	21-51	11-30	10-81	0-49	10-67	0-63	11
NOVA SCOTIA										
5-52	5-34	0-18	10-13	9-52	11-83	6-37	5-46	-	-	1
7-59	8-84	-1-25	14-15	14-89	9-12	8-36	0-76	-	-	2
20-86	17-94	2-92	16-17	22-97	13-04	11-35	1-69	11-38	1-66	3
10-14	8-58	1-56	18-19	25-33	13-22	12-22	1-00	12-51	0-71	4
3-55	4-41	-0-83	20-24	24-92	12-51	12-07	0-44	12-31	0-20	5
13-17	11-98	1-19	25-34	22-46	11-08	11-16	-0-08	11-13	-0-05	6
6-74	6-81	-0-07	35-44	19-64	10-07	10-12	-0-05	9-78	0-29	7
3-27	3-65	-0-38	45-54	20-48	10-62	10-43	0-19	10-18	0-44	8
2-02	2-19	-0-17	55-64	23-16	11-50	11-42	0-08	11-47	0-03	9
3-39	3-99	-0-60	65-69	26-96	12-83	12-83	-	13-29	-0-46	10
16-73	16-77	-0-04	70 and over	27-89	12-00	13-17	-1-17	13-74	-1-74	11
NEW BRUNSWICK										
7-69	7-29	0-40	10-13	25-93	17-93	12-44	5-49	-	-	1
15-96	17-24	-1-28	14-15	25-27	13-68	12-20	1-48	-	-	2
12-59	8-44	4-15	16-17	30-32	15-18	14-07	1-11	14-90	0-28	3
7-76	7-29	0-47	18-19	30-25	14-31	14-04	0-27	14-87	-0-56	4
3-43	3-76	-0-43	20-24	27-88	13-07	13-17	-0-10	13-73	-0-66	5
11-49	10-19	1-30	25-34	21-92	10-35	10-96	-0-61	10-87	-0-52	6
5-51	5-80	-0-29	35-44	17-47	8-29	9-31	-1-02	8-74	-0-45	7
2-07	3-14	-0-17	45-54	18-68	8-95	9-76	-0-81	9-32	-0-37	8
1-17	1-66	-0-49	55-64	23-30	10-87	11-47	-0-60	11-53	-0-66	9
4-01	4-76	-0-75	65-69	28-20	13-43	13-28	0-15	13-89	-0-46	10
17-87	18-36	-0-49	70 and over	29-98	14-62	13-94	0-68	14-74	-0-12	11
QUEBEC										
5-84	5-80	0-04	10-13	7-26	6-04	5-54	0-50	-	-	1
13-83	18-49	-4-66	14-15	14-96	9-56	8-39	1-17	-	-	2
14-18	15-45	-0-27	16-17	20-68	11-26	10-50	0-76	10-28	0-98	3
8-84	8-00	0-84	18-19	23-93	12-15	11-70	0-45	11-84	0-31	4
3-39	4-23	-0-84	20-24	22-51	11-21	11-18	0-03	11-15	0-06	5
13-41	11-38	2-03	25-34	18-85	9-49	9-83	-0-34	9-40	0-09	6
6-07	6-19	0-78	35-44	16-42	8-55	8-93	-0-38	8-23	0-32	7
4-41	4-67	-0-26	45-54	18-00	9-35	9-51	-0-16	8-99	0-36	8
2-23	2-74	-0-51	55-64	20-99	10-80	10-62	0-18	10-43	0-37	9
4-32	4-71	-0-39	65-69	24-36	12-18	11-86	0-32	12-04	0-14	10
17-40	16-01	1-39	70 and over	24-49	11-74	11-01	-0-17	12-11	-0-37	11

I.—PERCENTAGES NOT AT WORK JUNE 1, 1931 CORRELATED WITH AVERAGE NUMBER OF WEEKS LOST BY ALL MALE WAGE-EARNERS DURING THE YEAR, BY INDUSTRY, OCCUPATION AND AGE GROUPS, CANADA, BY PROVINCES, YEAR ENDED JUNE 1, 1931—Con.

No.	Industry Group	P.C. Not at Work June 1, 1931	Average Weeks Lost during Year			Occupation Group	P.C. Not at Work June 1, 1931
			Actual	Calculated	Error		
ONTARIO							
1	Agriculture.....	9-03	5-94	5-27	0-67	Agriculture.....	9-58
2	Forestry, fishing, and trapping.....	33-57	16-92	15-33	1-59	Fishing and logging.....	34-24
3	Mining.....	15-34	9-39	7-67	1-72	Mining.....	16-70
4	Manufacturing.....	18-61	10-90	9-05	1-85	Manufacturing.....	18-57
5	Electric light and power.....	8-09	4-73	4-88	-0-15	Clerical.....	8-45
6	Construction.....	35-34	19-19	10-07	3-12	Construction.....	29-09
7	Transportation.....	12-74	7-48	6-68	0-90	Transportation.....	11-50
8	Trade.....	10-68	5-81	5-72	0-09	Commercial.....	8-58
9	Finance.....	6-16	3-04	3-82	-0-78	Finance.....	4-90
10	Service.....	9-37	5-45	5-17	0-28	Service.....	7-91
11	Unspecified.....	56-91	25-27	25-15	0-14	Labourers.....	37-20
MANITOBA							
1	Agriculture.....	22-45	9-97	10-66	-0-69	Agriculture.....	22-35
2	Forestry, fishing, and trapping.....	42-20	15-14	18-98	-3-84	Fishing and logging.....	41-72
3	Mining.....	23-80	14-27	11-25	3-02	Mining.....	28-06
4	Manufacturing.....	17-50	9-05	8-58	0-47	Manufacturing.....	19-40
5	Electric light and power.....	13-13	7-01	6-74	0-27	Clerical.....	11-00
6	Construction.....	41-51	23-09	18-66	4-43	Construction.....	38-17
7	Transportation.....	18-06	8-96	8-82	0-14	Transportation.....	10-41
8	Trade.....	14-59	6-72	7-36	-0-64	Commercial.....	12-25
9	Finance.....	6-73	2-95	4-06	-1-11	Finance.....	4-35
10	Service.....	13-07	6-76	6-72	0-04	Service.....	11-15
11	Unspecified.....	67-50	28-12	29-58	-1-46	Labourers.....	47-58
SASKATCHEWAN							
1	Agriculture.....	20-98	9-99	10-04	-0-05	Agriculture.....	20-96
2	Forestry, fishing, and trapping.....	22-67	8-37	10-75	-2-38	Fishing and logging.....	21-90
3	Mining.....	38-73	16-39	17-50	-1-11	Mining.....	40-80
4	Manufacturing.....	18-27	8-16	8-90	-0-74	Manufacturing.....	21-90
5	Electric light and power.....	16-69	6-44	8-24	-1-80	Clerical.....	9-85
6	Construction.....	37-00	19-96	16-77	3-19	Construction.....	44-02
7	Transportation.....	15-74	7-73	7-84	-0-11	Transportation.....	15-12
8	Trade.....	13-94	5-60	7-08	-1-48	Commercial.....	11-35
9	Finance.....	6-03	2-39	3-76	-1-37	Finance.....	4-74
10	Service.....	11-12	5-25	5-90	-0-65	Service.....	8-43
11	Unspecified.....	66-44	25-83	29-13	-3-30	Labourers.....	46-39
ALBERTA							
1	Agriculture.....	19-56	10-71	9-45	1-26	Agriculture.....	19-43
2	Forestry, fishing, and trapping.....	41-10	14-83	18-49	-3-66	Fishing and logging.....	34-86
3	Mining.....	52-34	19-91	23-21	-3-40	Mining.....	57-38
4	Manufacturing.....	16-78	8-55	8-28	0-27	Manufacturing.....	21-64
5	Electric light and power.....	14-31	5-67	7-24	-1-57	Clerical.....	11-16
6	Construction.....	40-47	20-06	18-23	1-83	Construction.....	39-37
7	Transportation.....	16-44	8-15	8-13	0-02	Transportation.....	15-55
8	Trade.....	13-61	5-73	6-05	-1-20	Commercial.....	10-46
9	Finance.....	8-21	3-26	4-68	-1-42	Finance.....	0-34
10	Service.....	11-39	6-37	6-01	0-36	Service.....	10-13
11	Unspecified.....	64-16	26-59	28-18	-1-59	Labourers.....	43-48
BRITISH COLUMBIA							
1	Agriculture.....	23-15	13-52	10-95	2-57	Agriculture.....	22-52
2	Forestry, fishing, and trapping.....	42-70	22-69	19-16	3-43	Fishing and logging.....	44-77
3	Mining.....	35-67	17-23	16-21	1-02	Mining.....	39-83
4	Manufacturing.....	21-97	11-66	10-46	1-20	Manufacturing.....	22-74
5	Electric light and power.....	14-03	6-44	7-37	-0-93	Clerical.....	11-96
6	Construction.....	42-11	21-11	18-92	2-19	Construction.....	37-19
7	Transportation.....	20-21	9-92	9-72	0-20	Transportation.....	18-29
8	Trade.....	13-91	6-62	7-07	-0-45	Commercial.....	11-18
9	Finance.....	9-50	4-16	5-22	-1-06	Finance.....	6-75
10	Service.....	13-46	7-06	6-88	0-18	Service.....	13-56
11	Unspecified.....	63-82	27-91	28-03	-0-12	Labourers.....	44-13

Notes:—

$$\bar{y} = 10.10 \quad \bar{x} = 21.11$$

$$\sigma_y^2 = 45.94 \quad \sigma_x^2 = 248.38$$

$$\sigma_y = 6.77 \quad \sigma_x = 15.76$$

$$\bar{xy} = 103.51$$

$$r = .97$$

$$y = 0.42x + 1.23$$

$$S = 1.65$$

$$\bar{y} = 9.24 \quad \bar{x} = 19.03$$

$$\sigma_y^2 = 37.91 \quad \sigma_x^2 = 184.20$$

$$\sigma_y = 6.16 \quad \sigma_x = 13.57$$

$$\bar{xy} = 80.76$$

$$r = .97$$

$$y = 0.44x + 0.87$$

$$S = 1.52$$

CENSUS OF CANADA. 1931

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I.—PERCENTAGES NOT AT WORK JUNE 1, 1931 CORRELATED WITH AVERAGE NUMBER OF WEEKS LOST BY ALL MALE WAGE-EARNERS DURING THE YEAR, BY INDUSTRY, OCCUPATION AND AGE GROUPS, CANADA, BY PROVINCES, YEAR ENDED JUNE 1, 1931—Con.

Average Weeks Lost during Year			Age Group	P.C. Not at Work June 1, 1931	Average Weeks Lost during Year					No.
Actual	Calculated	Error			Actual (10 years and over)	Calculated (10 years and over)	Error (10 years and over)	Calculated (16 years and over)	Error (16 years and over)	
ONTARIO										
8-07	5-09	0-98	10-13	4-65	3-31	4-57	-1-26	-	-	1
17-28	15-94	1-34	14-15	12-32	8-08	7-41	0-67	-	-	2
10-14	8-22	1-92	16-17	17-34	10-75	9-27	1-48	8-67	2-08	3
10-75	9-04	1-71	18-19	20-29	11-43	10-36	1-07	10-09	1-34	4
4-12	4-59	-0-47	20-24	20-29	11-06	10-36	0-70	10-09	0-97	5
16-06	13-93	2-13	25-34	18-64	10-26	9-75	0-51	9-30	0-96	6
6-91	5-33	0-98	35-44	16-40	9-17	8-92	0-25	8-22	0-95	7
4-58	4-64	-0-06	45-54	18-03	9-76	9-52	0-24	9-00	0-76	8
2-81	3-03	-0-22	55-64	20-69	10-81	10-51	0-30	10-28	0-53	9
4-29	4-35	-0-06	65-69	24-97	12-44	12-09	0-35	12-34	0-10	10
19-23	17-24	1-99	70 and over	23-77	11-77	11-64	0-13	11-76	0-01	11
MANITOBA										
10-01	10-70	-0-69	10-13	-	4-45	2-85	1-60	-	-	1
14-53	19-23	-4-70	14-15	16-41	9-19	8-92	0-27	-	-	2
16-73	13-22	3-51	16-17	22-23	12-16	11-08	1-08	11-02	1-14	3
9-68	9-41	0-27	18-19	24-05	12-30	12-08	0-22	12-33	-0-03	4
4-64	5-71	-1-07	20-24	26-02	12-23	12-48	-0-25	12-84	-0-61	5
18-06	16-78	1-28	25-34	27-00	12-81	12-84	-0-03	13-31	-0-50	6
8-41	8-09	0-32	35-44	21-08	10-26	10-65	-0-39	10-47	-0-21	7
5-39	6-26	-1-19	45-54	20-70	10-03	10-51	-0-48	10-29	-0-26	8
2-28	2-78	-0-50	55-64	25-36	11-91	12-23	-0-32	12-52	-0-61	9
5-44	5-78	-0-34	65-69	29-06	13-89	13-60	0-29	14-30	-0-41	10
22-75	21-81	0-94	70 and over	27-87	11-77	13-16	-1-39	13-73	-1-96	11
SASKATCHEWAN										
9-97	10-09	-0-12	10-13	11-11	3-33	6-96	-3-63	-	-	1
7-62	10-51	-2-89	14-15	20-52	10-09	10-44	-0-35	-	-	2
18-68	21-46	-2-78	16-17	23-45	11-77	11-53	0-24	11-61	0-16	3
9-82	10-51	-0-69	18-19	23-43	11-32	11-52	-0-20	11-60	-0-28	4
3-87	5-20	-1-33	20-24	22-59	10-37	11-21	-0-84	11-19	-0-82	5
19-92	20-24	-0-32	25-34	22-89	10-70	11-32	-0-62	11-34	-0-64	6
7-71	7-52	0-19	35-44	20-69	9-19	10-51	-1-32	10-28	-1-09	7
4-17	5-86	-1-69	45-54	20-91	9-13	10-59	-1-46	10-39	-1-26	8
2-32	2-64	-0-32	55-64	24-40	10-93	11-88	-0-95	12-06	-1-13	9
3-95	4-58	-0-63	65-69	29-01	13-04	13-58	-0-54	14-27	-1-23	10
20-73	21-28	-0-55	70 and over	25-62	11-04	12-33	-1-29	12-65	-1-61	11
ALBERTA										
10-71	9-42	1-29	10-13	20-00	8-00	10-25	-2-25	-	-	1
14-20	16-21	-2-01	14-15	14-45	8-41	8-20	0-21	-	-	2
21-73	26-12	-4-39	16-17	21-87	11-77	10-94	0-83	10-85	0-92	3
9-84	10-39	-0-55	18-19	23-30	11-51	11-47	0-04	11-53	-0-02	4
4-41	5-78	-1-37	20-24	23-17	11-00	11-42	-0-33	11-47	-0-38	5
18-28	18-19	0-09	25-34	25-53	12-04	12-30	-0-26	12-60	-0-50	6
7-68	7-71	-0-03	35-44	23-44	10-69	11-52	-0-83	11-60	-0-91	7
4-41	5-47	-1-06	45-54	22-50	10-26	11-21	-0-95	11-19	-0-93	8
2-84	3-66	-0-82	55-64	24-98	11-40	12-09	-0-69	12-34	-0-94	9
5-22	5-33	-0-11	65-69	29-94	13-20	13-03	0-17	14-72	-1-52	10
20-43	20-00	0-43	70 and over	26-30	12-00	12-61	-0-61	13-02	-1-02	11
BRITISH COLUMBIA										
13-32	10-78	2-54	10-13	34-62	6-54	15-66	-9-12	-	-	1
22-92	20-57	2-35	14-15	14-01	9-82	8-03	1-79	-	-	2
19-03	18-40	0-63	16-17	22-89	12-65	11-21	1-44	11-19	1-46	3
11-66	10-88	0-78	18-19	27-09	13-94	13-10	0-84	13-64	0-30	4
5-39	6-13	-0-74	20-24	27-52	13-89	13-03	0-86	13-56	0-33	5
18-01	17-23	0-78	25-34	25-61	13-21	12-33	0-88	12-64	0-57	6
9-17	8-92	0-25	35-44	24-84	12-43	12-04	0-39	12-27	0-16	7
5-24	5-79	-0-50	45-54	28-13	13-76	13-25	0-50	13-85	-0-09	8
3-46	3-84	-0-38	55-64	33-37	16-16	15-20	0-96	16-37	-0-21	9
6-86	6-84	0-02	65-69	40-69	19-15	17-91	1-24	19-88	-0-73	10
21-53	20-29	1-24	70 and over	38-88	18-77	17-24	1-53	19-01	-0-24	11

Omitting 10-15 years

$$\bar{y} = 10.62$$

$$\bar{x} = 20.99$$

$$\bar{y} = 11.18$$

$$\bar{x} = 22.56$$

$$\sigma_y^2 = 10.45$$

$$\sigma_x^2 = 58.90$$

$$\sigma_y^2 = 7.86$$

$$\sigma_x^2 = 40.79$$

$$\sigma_y = 3.23$$

$$\sigma_x = 7.67$$

$$\sigma_y = 2.80$$

$$\sigma_x = 6.39$$

$$\bar{y} = 21.92$$

$$\bar{y} = 17.19$$

$$r = .88$$

$$r = .96$$

$$y = 0.37x + 2.85$$

$$y = 0.48x + 0.35$$

$$S = 1.50$$

$$S = 0.78$$

As shown in the notes at the foot of Statement I, the coefficient of correlation in the industry and occupation groups is .97 and in age groups (omitting 10-15 years) is .96. This alone is so high that it is not likely that we are deceived by certain features which so often trick the investigator of data of this kind. However, no point is made on the score of this coefficient of correlation. What will be shown now is the closeness of the fit of the average number of weeks idle, as calculated on the basis of the fitting, to the actual number of weeks reported to the enumerator, also the *nature of the discrepancies in this fit*.

Remembering the *a priori* equations laid down, viz., $y = A + Kx$ where y = average number of weeks idle for all wage-earners; x = p.c. idle June 1, and $K = \frac{52}{B}$; B being the bias of June 1 over the average of the year, the following equations were obtained:—

- (1) For industries, $y = .42x + 1.23$; standard error of fit = 1.65 wks.; $\sigma_y = 6.77$ wks.;
- (2) For occupations, $y = .44x + 0.87$; standard error of fit = 1.52 wks.; $\sigma_y = 6.16$ wks.;
- (3) For age,* $y = .48x + 0.35$; standard error of fit = 0.78 wks.; $\sigma_y = 2.80$ wks.

The standard error shows the closeness of the fit. The fact that it is closer for the age groups than for either of the others is obviously due to the smaller standard deviation of the age groups, i.e., there is not the same individuality differentiating the idleness of persons of different ages running through all occupations and industries that there is differentiating industries and occupations. The idleness of a group of persons at a certain age could be predicted much more closely than that of a similar-sized group in a given industry or occupation. However, the application of this point will be postponed.

Bias of June 1 over Year.—Examining first the bias of June 1 over the year,

$$\text{in (1) } \frac{52}{B} = .42, \text{ so that } B = 1.24;$$

$$\text{in (2) } \frac{52}{B} = .44, \text{ so that } B = 1.18;$$

$$\text{in (3) } \frac{52}{B} = .48, \text{ so that } B = 1.08.$$

That is, the bias of June 1 varied very slightly in the case of the three sets and a slight difference was to be expected; moreover, a part of this difference is due to the incompleteness of the investigation. There is possibly still a trend bidden in the arbitrary constants 1.23, 0.87 and 0.35.

Index of Employment in Firms.—At this point independent evidence will be invoked. Was June 1 worse than the average of the year? We can not, from this outside evidence, measure exactly how much worse, because as already explained, monthly records from the reports of firms do not deal with the same persons or categories as the census on June 1. It is enough to establish the fact that there was a bias. Taking the Dominion Bureau of Statistics' monthly index of employment in firms, we have the following (base 1926):—

	Index		Index
June, 1930.....	118.9	January, 1931.....	100.7
July.....	118.8	February.....	100.2
August.....	116.6	March.....	99.7
September.....	116.2	April.....	102.2
October.....	112.9	May.....	103.6
November.....	108.5	Average for year	
December.....	101.7	(unweighted).....	108.3

Thus the employment of the year was $\frac{108.3}{103.6}$ or 1.05 times as good as the employment of June 1 (May 31, 1931 being taken as the equivalent of June 1). Naturally it would follow that the unemployment on June 1 was worse than that of the year.

* Ages 10-15 are omitted.

Since the number unemployed is much smaller than the number employed, naturally the 1.05 for employment would mean a much larger figure for unemployment. Clearly the bias deduced by the equation is confirmed by the index of employment in firms.

Unemployment in Labour Unions.—Now the figures of unemployment in labour unions will be considered. Taking the figures as they are, we have:—

P.C. Unemployed Reporting Members		P.C. Unemployed Reporting Members	
June, 1930.....	10.6	January, 1931.....	16.0
July.....	9.2	February.....	15.6
August.....	9.3	March.....	15.5
September.....	9.4	April.....	14.9
October.....	10.8	May.....	16.2
November.....	13.8		
December.....	17.0	Average for year.....	11.9

The bias of June over the average of the year was $\frac{16.2}{11.9}$ or 1.36—very nearly that shown by the equation. There seems to be little doubt that one of the *a priori* conditions laid down is satisfied.

Discrepancies Accounted for by Individuality of Various Groups.—The next condition is that the calculation be so close that the discrepancies between the calculated and the actual prove small enough to be easily accounted for by individuality in the occupations, seasonal features, etc. The closeness of the calculation is seen in Statement I under the headings "calculated weeks" and "error." The table reveals the particular occupations, industries and ages that show wide discrepancies. It is noticeable that for the calculation in the case of occupations, 68 p.c. is expected to be less than 1.52 weeks, or say 9-12 days out; in the case of the industries 1.65 weeks or 9.90 days and in the case of the ages 0.78 or 4.68 days out. The fact that the calculation by ages shows the closest approximation of the three sets is quite reasonable. It is entirely due to a smaller spread or variability in unemployment as between ages than as between, say, occupations (since the coefficient of correlation is the same in all three cases). Ages are crossed with both occupations and industries as well as other conditions. It is a clear indication that the nature of the occupation differentiates the chances of employment more than the individuality of the person, and this point is perhaps important.

To show how far the calculation satisfies the conditions laid down, Statement II below gives in day intervals (1 week being taken as equivalent to 6 days) the probabilities of accurately predicting the time idle during the year from the percentage idle on June 1. The first column shows this probability on the basis of the standard error of fit; the third column shows the actual proportion of the 98 occupation groups in each interval. The two probabilities should coincide but a perfect coincidence was not to be expected in as small a number of cases as 98. Clearly the correlation would have been higher than .97 if it had not been for four extreme cases which appear on the last row of intervals. The predictability of the time lost during the year is really greater than that shown by the coefficient .97 but it did not seem right to omit these four cases, *viz.*, mining, New Brunswick (+ 4.15 weeks); forestry, fishing, and trapping, Quebec (- 4.66); forestry, fishing, and trapping, Manitoba (- 4.70) and mining, Alberta (- 4.39). The plus sign indicates under-calculation and the minus sign over-calculation. The last three show that unemployment conditions on June 1 were much better (not only absolutely but also as compared with other occupations) than the average for the year, while mining in New Brunswick was much worse. The last columns of the table show the number of persons affected (the original calculation was based upon the number of occupation groups affected). The fit to theory is much closer in this case. These columns show that the size of the group can have had no effect upon the closeness of the prediction. However, the "average size of the group" is hardly a test of this point since these averages are all large.

II.—OCCUPATION GROUPS: FIT OF THE CALCULATION OF THE AVERAGE WEEKS LOST BY ALL MALE WAGE-EARNERS ON THE BASIS OF JUNE 1, TO THE REPORTED WEEKS LOST, CANADA, 1931

Probability on Basis of Standard Error of Fit	Not More than "x" Days Out ¹	Accumulated Number of Groups	Probability on Basis of Actual Groups	Number of Wage-Earners Represented by Each Interval	Average Wage-Earners per Group	Accumulated Number of Wage-Earners	Probability on Basis of Wage-Earners	Average Size of Accumulated Groups
-.0876.....	1	12	-.1224	301,450	25,121	301,450	-.1488	25,121
-.1742.....	2	23	-.2347	157,299	14,300	458,749	-.2280	19,940
-.2588.....	3	39	-.3673	197,331	15,179	656,080	-.3260	18,234
-.3400.....	4	45	-.4592	66,885	7,429	722,945	-.3593	16,065
-.4176.....	5	54	-.5510	150,878	16,764	873,823	-.4342	16,182
-.4908.....	6	61	-.6224	322,386	46,055	1,196,209	-.5944	19,610
-.5588.....	7	63	-.6429	20,284	10,142	1,216,493	-.6045	19,309
-.6212.....	8	74	-.7551	115,901	10,536	1,332,394	-.6621	18,005
-.6778.....	9	78	-.7959	149,359	37,340	1,481,753	-.7363	18,997
-.7288.....	10	79	-.8051	10,369	10,369	1,492,122	-.7415	18,888
-.7738.....	11	81	-.8265	174,786	37,393	1,666,908	-.8293	20,579
-.8132.....	12	83	-.8469	156,663	78,332	1,823,571	-.9062	21,971
-.8472.....	13	86	-.8776	114,908	38,303	1,938,470	-.9633	22,540
-.8764.....	14	86	-.8776	-	-	1,938,470	-.9633	22,540
-.8990.....	15	87	-.8878	15,116	15,116	1,953,595	-.9708	22,455
-.9198.....	16	88	-.8980	12,951	12,951	1,966,546	-.9772	22,347
-.9372.....	17	90	-.9184	2,527	1,264	1,969,073	-.9785	21,879
-.9512.....	18	92	-.9383	15,250	7,625	1,984,323	-.9861	21,569
-.9624.....	19	92	-.9388	-	-	1,984,323	-.9861	21,569
-.9714.....	20	92	-.9388	-	-	1,984,323	-.9861	21,569
-.9786.....	21	93	-.9490	639	639	1,984,962	-.9864	21,344
-.9840.....	22	94	-.9592	1,240	1,240	1,986,202	-.9870	21,130
-.9882.....	23	94	-.9592	-	-	1,986,202	-.9870	21,130
1-0000.....	Total	98	1-0000	26,129	6,532	2,012,331	1-0000	20,534

¹ e.g., -.0876 of the total are not more than 1 "days out" and so on.

As a matter of interest, Statement III makes the same analysis as Statement II, using age groups instead of occupation groups. As already mentioned the prediction in the case of age groups is much closer. This does not seem to serve any practical purpose except perhaps as indicating that for a random group of individuals from all occupations, the June 1 data are apt to be more representative of the year than for occupations or industry groups, and this, if true, is very important knowledge. This has no bearing upon the reliability of the census year's data. It merely means that there is less variability between random groups of individuals than between occupation or industry groups. For example if we take ages 35-64 in the nine provinces, our errors of calculation are:—

Prince Edward Island....	0.73 weeks	Manitoba.....	-0.36 weeks
Nova Scotia.....	0.25 "	Saskatchewan.....	-1.16 "
New Brunswick.....	-0.49 "	Alberta.....	-0.93 "
Quebec.....	0.35 "	British Columbia.....	-0.05 "
Ontario.....	0.75 "		

The root of the mean square error is 0.66 weeks or 3.96 days, i.e., 68 p.e. of the cases of weeks idle during the year could be calculated from June 1 to within 3.96 days which, of course, is unnecessarily close.

III.—AGE GROUPS: FIT OF THE CALCULATION OF THE AVERAGE WEEKS LOST BY MALE WAGE-EARNERS 16 YEARS OF AGE AND OVER ON THE BASIS OF JUNE 1, TO THE REPORTED WEEKS LOST, CANADA, 1931

Probability on Basis of Standard Error of Fit	Not More than "x" Days Out	Accumulated Number of Groups	Probability on Basis of Actual Groups	Number of Wage-Earners Represented by Each Interval	Average Wage-Earners per Group	Accumulated Number of Wage-Earners	Probability on Basis of Wage-Earners	Average Size of Accumulated Groups
-.1664.....	1	13	-.1605	411,565	31,659	411,565	-.2048	31,659
-.3328.....	2	25	-.3086	293,675	24,473	705,240	-.3509	29,210
-.4778.....	3	37	-.4568	216,397	18,033	921,637	-.4586	24,909
-.6046.....	4	50	-.6173	247,985	19,076	1,169,622	-.5620	23,392
-.7154.....	5	55	-.6790	156,595	31,319	1,326,217	-.6699	24,113
-.7904.....	6	65	-.8025	554,748	55,475	1,880,965	-.9360	28,038
-.8564.....	7	70	-.8642	36,806	7,361	1,917,771	-.9543	27,367
-.9128.....	8	72	-.8889	18,074	9,037	1,935,845	-.9633	26,887
-.9452.....	9	74	-.9136	43,168	21,584	1,979,013	-.9847	26,743
-.9676.....	10	77	-.9506	5,292	1,764	1,984,305	-.9874	25,770
-.9812.....	11	78	-.9630	1,764	1,764	1,986,069	-.9893	25,462
-.9896.....	12	79	-.9753	1,073	1,073	1,987,142	-.9888	25,154
1-0000.....	Total	81	1-0000	22,540	11,270	2,009,682	1-0000	24,811

To make still more certain, another set of figures was tested, *viz.*, the number not at work on June 1 and the average weeks idle during the year in 534 different urban localities, *i.e.*, all incorporated places over 1,000. The material for this was compiled by hand count and is available only for male wage-earners 20 years and over. The test, in addition to the increased reliability from using a large number of groups (534 instead of 98), enables us to examine the situation from the point of view of locality.

Statement IV shows in the form of a correlation table the distribution of weeks idle during the year according to the percentage idle June 1.

IV.—SCATTER DIAGRAM SHOWING FREQUENCY DISTRIBUTION OF 532¹ URBAN CENTRES,
ACCORDING TO INTERVALS OF PERCENTAGE OF MALE WAGE-EARNERS 20 YEARS
OF AGE AND OVER NOT AT WORK JUNE 1, 1931 IN RELATION TO AVERAGE
WEEKS LOST DURING YEAR ENDED JUNE 1, 1931

[illegible]¹ 2 urban centres, with average weeks lost less than 1, are omitted.

It remains to examine the third condition, *viz.*, that the occupations or industries which show the widest divergencies between the calculated and the actual weeks lost show these divergencies for good reasons, *e.g.*, being more seasonal than the others. The industries with divergencies exceeding the standard error were as follows:—

Over-estimated industry (A)		Under-estimated industry (B)	
Finance.....	P.E.I.	Construction.....	P.E.I.
Electric light and power.....	N.B.	General labour.....	P.E.I.
General labour.....	N.B.	Mining.....	N.S.
Forestry.....	Que.	Manufacturing.....	N.S.
Forestry.....	Man.	Mining.....	N.B.
Forestry.....	Sask.	Construction.....	Que.
Electric light and power.....	Sask.	Mining.....	Ont.
General labour.....	Sask.	Manufacturing.....	Ont.
Forestry.....	Alta.	Construction.....	Ont.
Mining.....	Alta.	Mining.....	Man.
		Construction.....	Man.
		Construction.....	Sask.
		Construction.....	Alta.
		Agriculture.....	B.C.
		Forestry, fishing, and trapping..	B.C.
		Construction.....	B.C.

Prediction Applied to 1921.—A still further test is to see if the figures of another census year bear out the testimony of those of 1931. The same facts for June 1 and the year were obtained in 1921 as in 1931. Instead of testing the 1921 figures exactly as above, it was decided to subject them to a more rigid test. The relationship between June 1 and the year in 1931 (as already seen) in the case of the occupation groups (1921 was compiled by occupation rather than by industry groups) was: $y = 0.44x + 0.87$ where y = average weeks lost by all wage-earners and x = the percentage of wage-earners idle June 1. Now if this equation were applied to the June figures of 1921 to calculate the average weeks idle of that year, the relationship of the resulting number of weeks idle to the actual number of weeks idle (in 1921) should be proportional to the bias of June in 1931 to that in 1921. The results are to be seen in Statement V. These results were then correlated with the actual average weeks idle in 1921 giving the following equation:—

$$y_{1921} = 0.90 y_{1931} + 0.09.$$

This means that a calculation of 1921 on the basis of the 1931 relationship was $\frac{1.00}{0.90}$ or 11 p.c. too high. Now is this borne out by extraneous testimony?

Taking the *Labour Gazette* figures for the year up to June 1, 1921 (since each month's figures are as on the last day of the month, the May figure is taken here as representative of June 1) we have:—

	P.C. Unemployed Reporting Members		P.C. Unemployed Reporting Members
June, 1920.....	2.5	January, 1921.....	13.1
July.....	2.6	February.....	16.1
August.....	3.2	March.....	16.5
September.....	3.3	April.....	16.3
October.....	6.0	May.....	15.5
November.....	10.0		
December.....	13.4	Average for year.....	9.9

$$\text{Bias of June 1} = \frac{15.5}{9.9} = 1.57.$$

$$\text{Bias of June 1, 1931 over year 1931 (as already seen)} = 1.36.$$

$$\text{Bias } \frac{\text{June 1, 1921}}{\text{June 1, 1931}} = 1.15. \text{ This is so near to the bias indicated by the } 0.90 \text{ of the equation,}$$

viz., 1.11 that there can be no doubt that the condition is satisfied. As already mentioned this was a very rigid test so that the results must be regarded as eminently satisfactory.

Another source of verification is the index numbers of employment as collected by the Dominion Bureau of Statistics. Of course, since these figures are for *employment* instead of *unemployment*, the process of measuring the bias of June over the year will have to be reversed. The comparative indices of the years 1921 and 1931 were as follows:—

1st of month	1920-21	1930-31
July.....	109.1	118.9
August.....	109.7	118.8
September.....	108.8	116.6
October.....	108.6	116.2
November.....	107.1	112.9
December.....	101.5	108.5
January.....	88.8	101.7
February.....	91.2	100.7
March.....	89.1	100.2
April.....	85.1	99.7
May.....	85.1	102.2
June.....	87.7	103.6
Total.....	1,171.8	1,300.0
Average.....	97.65	108.3
Bias of June 1.....	1.113	1.045

$$\text{Bias } \frac{\text{June 1, 1921}}{\text{June 1, 1931}} = \frac{1.113}{1.045} = 1.07.$$

This bias corresponds to that obtained from the labour union figures (1.15) and also to that obtained from the equation (1.11), i.e., two outside sources and two sets of census figures give the same story. This would seem to demonstrate the accuracy of the data. Incidentally we have thus discovered some great possibilities from these current data on labour union and employment indices.

V.—AVERAGE NUMBER OF WEEKS LOST BY MALE WAGE-EARNERS, BY OCCUPATION GROUP, CANADA, BY PROVINCES, YEAR ENDED JUNE 1, 1921 CALCULATED FROM EQUATION BASED UPON 1931 DATA

Province and Occupation Group	(1) Average Number of Weeks Lost during Year, 1921 Calculated from 1931 Equation	(2) Actual Average Number of Weeks Lost during Year, 1921	(3) Weeks Lost 1921 Calculated from Correlation of Col. 1 and Col. 2	(4) Error
<i>Prince Edward Island—</i>				
Agriculture.....	1.06	2.37	1.85	0.52
Fishing and logging.....	6.02	4.28	5.51	-1.23
Manufacturing.....	4.05	3.59	3.74	-0.15
Construction.....	5.98	6.20	5.45	0.75
Transportation.....	4.14	3.37	3.82	-0.45
Commercial.....	2.49	1.24	2.33	-1.09
Finance.....	1.53	0.69	1.47	-0.78
Service.....	2.72	1.92	2.54	-0.52
Clerical.....	1.00	1.68	1.80	-0.12
Labourers.....	6.15	5.88	5.61	0.27
<i>Nova Scotia—</i>				
Agriculture.....	3.31	2.75	3.07	-0.32
Fishing and logging.....	8.14	6.32	7.42	-1.10
Mining.....	7.41	6.48	5.76	-0.30
Manufacturing.....	8.54	6.69	7.78	-1.09
Construction.....	9.45	8.74	8.60	0.14
Transportation.....	6.69	4.89	6.11	-1.25
Commercial.....	3.60	2.63	3.38	-0.75
Finance.....	1.04	0.84	1.37	-0.73
Service.....	4.39	3.12	4.04	-0.92
Clerical.....	3.67	2.20	3.39	-1.19
Labourers.....	11.62	8.94	10.55	-1.61
<i>New Brunswick—</i>				
Agriculture.....	3.69	2.82	3.32	-0.50
Fishing and logging.....	11.96	6.84	10.85	-4.01
Mining.....	11.10	11.47	10.08	1.39
Manufacturing.....	6.32	5.15	5.78	-0.63
Construction.....	7.89	7.38	7.19	0.19
Transportation.....	6.28	4.71	5.74	-1.03
Commercial.....	3.25	2.20	3.02	-0.82
Finance.....	2.15	1.50	2.03	-0.53
Service.....	4.32	2.99	3.98	-0.99
Clerical.....	3.25	2.12	3.02	-0.80
Labourers.....	12.38	8.45	11.25	-2.68

V.—AVERAGE NUMBER OF WEEKS LOST BY MALE WAGE-EARNERS, BY OCCUPATION GROUP
CANADA, BY PROVINCES, YEAR ENDED JUNE 1, 1921 CALCULATED
FROM EQUATION BASED UPON 1931 DATA—Con.

Province and Occupation Group	(1) Average Number of Weeks Lost during Year, 1921 Calculated from 1931 Equation	(2) Actual Average Number of Weeks Lost during Year, 1921	(3) Weeks Lost 1921 Calculated from Correlation of Col. 1 and Col. 2	(4) Error
Quebec—				
Agriculture.....	2.42	2.21	2.27	-0.06
Fishing and logging.....	6.00	4.07	5.49	-1.42
Mining.....	6.08	4.91	5.56	-0.65
Manufacturing.....	5.60	5.83	5.18	0.65
Construction.....	6.08	7.46	5.56	1.90
Transportation.....	4.67	4.65	4.29	0.36
Commercial.....	2.79	2.34	2.60	-0.26
Finance.....	2.96	1.22	1.94	-0.72
Service.....	2.85	2.14	2.66	-0.62
Clerical.....	2.89	2.08	2.66	-0.68
Labourers.....	7.35	7.30	6.71	0.59
Ontario—				
Agriculture.....	2.97	3.17	2.76	0.41
Fishing and logging.....	6.50	6.32	6.02	0.30
Mining.....	6.17	5.27	5.64	-0.37
Manufacturing.....	6.96	6.20	6.35	-0.15
Construction.....	8.10	8.80	7.38	1.42
Transportation.....	4.43	4.60	4.08	0.52
Commercial.....	3.40	2.78	3.15	-0.37
Finance.....	2.24	1.69	2.11	-0.42
Service.....	3.60	3.24	3.41	-0.17
Clerical.....	3.24	2.59	3.61	-0.42
Labourers.....	8.68	8.57	7.90	0.67
Manitoba—				
Agriculture.....	3.35	3.78	3.11	0.67
Fishing and logging.....	8.60	6.71	7.83	-1.12
Mining.....	10.44	7.71	9.49	-1.78
Manufacturing.....	5.64	5.57	5.17	0.40
Construction.....	7.74	9.92	7.05	2.85
Transportation.....	5.06	4.30	4.64	-0.34
Commercial.....	3.45	2.86	3.20	-0.34
Finance.....	3.02	1.62	1.91	-0.29
Service.....	3.95	3.46	3.65	-0.19
Clerical.....	2.96	2.32	2.75	-0.43
Labourers.....	8.72	8.56	7.94	0.62
Saskatchewan—				
Agriculture.....	2.16	3.37	2.03	1.34
Fishing and logging.....	3.23	4.05	3.00	1.05
Mining.....	4.27	4.63	3.93	0.70
Manufacturing.....	3.84	4.03	3.55	0.48
Construction.....	6.34	8.25	5.80	2.45
Transportation.....	3.90	3.52	3.60	-0.08
Commercial.....	2.05	1.70	1.94	-0.24
Finance.....	1.18	0.67	1.15	-0.48
Service.....	1.94	2.16	1.85	0.31
Clerical.....	2.09	1.50	1.97	-0.47
Labourers.....	5.35	6.69	4.91	1.78
Alberta—				
Agriculture.....	3.12	4.82	2.90	1.92
Fishing and logging.....	6.06	5.59	5.54	0.05
Mining.....	14.10	10.99	12.78	-1.79
Manufacturing.....	5.16	5.40	4.73	0.67
Construction.....	9.11	9.64	8.29	1.25
Transportation.....	4.12	4.17	3.79	0.38
Commercial.....	2.82	2.40	2.63	-0.25
Finance.....	2.00	1.14	1.97	-0.83
Service.....	3.95	3.62	3.65	-0.03
Clerical.....	2.82	2.02	2.63	-0.61
Labourers.....	8.00	8.37	7.29	1.08
British Columbia—				
Agriculture.....	6.18	6.94	5.65	1.29
Fishing and logging.....	6.12	12.49	5.60	6.89
Mining.....	7.71	9.72	7.03	2.69
Manufacturing.....	8.11	8.02	7.39	0.63
Construction.....	12.25	12.92	11.12	1.80
Transportation.....	7.34	6.90	6.70	0.20
Commercial.....	3.75	4.16	3.47	0.69
Finance.....	4.31	2.44	3.97	-1.63
Service.....	6.48	5.24	5.92	-0.68
Clerical.....	5.27	3.97	4.83	-0.86
Labourers.....	10.08	10.63	9.16	1.47

¹ Calculation referred to in Column 3—

$$\begin{aligned} \bar{y} &= 4.87 & \bar{x} &= 7.31 \\ z &= 5.31 & r_{zy} &= 0.89 \\ \sigma_y &= 2.87 & p &= 0.90z + 0.09 \\ \sigma_z &= 2.85 & S &= 1.31 \end{aligned}$$

Behaviour of Duration Data.—There is still one condition to be satisfied. One is always afraid, in calculations of this kind, that something is assumed which causes figures to work in the way one wants them to work. It is true that the testimony of independent evidence such as the index numbers of employment in firms reporting monthly and the labour union figures obviates this danger to a large extent, but there is still an element of distrust which arises from the very nature of data.

If June 1 had happened to be a perfectly definite fraction of the number idle at any time during the year, and this fraction perfectly representative of the time lost during the year, it would mean that everybody who lost time, must have lost the same number of weeks. We know it is not a constant, but it seems that the closer the approximation to perfection in the correlation the closer the approach to constancy. Does this mean that we have the high correlations shown because everybody reporting weeks idle tends to say the same thing? That is, is there a tendency for the person's answer to the question to depend upon psychology or chance so that the answers tend to a general average, varying from the average in a symmetrical manner? The only way to settle this point is to examine what the person actually says. The census compilations give the number of weeks lost reported by each person in the following manner: "number losing 1 week, 2 weeks, etc." Now do all persons tend to answer in such a manner that the general average is independent of the occupation, industry, etc., of the person, or are the answers governed strongly by external rather than internal conditions? It is necessary, therefore, to describe the manner in which the person enumerated answers the question "number of weeks lost during the year." First let us examine males and females in 1921 (Canada as a whole).

VI.—PERCENTAGES OF THOSE LOSING TIME AND PERCENTAGES OF THOSE LOSING TIME DIVIDED BY LENGTH OF INTERVAL, BY WEEK INTERVALS AND SEX, CANADA, YEAR ENDED JUNE 1, 1921

Interval of Duration of Idleness	Males		Females	
	P.C. of Those Losing Time	P.C. Losing Time Divided by Length of Interval	P.C. of Those Losing Time	P.C. Losing Time Divided by Length of Interval
1-4 weeks.....	19.77	4.94	23.55	5.89
5-8 ".....	17.79	4.45	19.18	4.80
9-13 ".....	18.51	3.70	16.98	3.40
14-17 ".....	10.75	2.69	8.01	2.00
18-26 ".....	20.61	2.29	16.26	1.81
27 " and over.....	12.57	0.48	16.02	0.62

Obviously, in the case of both males and females in 1921 the tendency was a very definite decrease from interval to interval. There is a trifling tendency for the interval 18-26 weeks to fall out of line and be over-represented, and this is possibly psychological. Indeed it is probably largely due to the fact that there are five even numbers in this interval (of 9 weeks) while there are only two in the other intervals (of 4 or 5 weeks). Furthermore it contains the half-year durations. There is a remarkable symmetry in the decrease from interval to interval. The only way in which the behaviour of these duration periods can be understood is by showing them in their various relations to another feature, with which, as will presently appear, it has a close connection, *viz.*, the percentage losing any time. In the following statement the figures for the different provinces, separately for males and females (as there seems to be some difference in behaviour between the sexes) are shown in ascending order of the percentages losing time. The duration of time lost by those losing time is shown by averages of intervals, since the intervals are of unequal length. It is questionable whether the interval "27 weeks and over" should be regarded as 26 weeks, but this can not be helped.

VII.—PERCENTAGES LOSING TIME AND PERCENTAGE DISTRIBUTION BY WEEK INTERVALS OF THOSE LOSING TIME (PERCENTAGE IN EACH INTERVAL DIVIDED BY LENGTH OF INTERVAL), BY SEX, CANADA AND PROVINCES (ARRANGED IN ASCENDING ORDER OF PERCENTAGES LOSING TIME), YEAR ENDED JUNE 1, 1921

Province	P.C. Losing Any Time	P.C. of Those Losing Time Divided by Length of Interval					
		1-4 Weeks	5-8 Weeks	9-13 Weeks	14-17 Weeks	18-25 Weeks	27 Weeks and over
MALES							
Prince Edward Island.....	23-13	4-01	4-82	3-08	2-81	2-46	0-44
Saskatchewan.....	23-90	4-62	4-17	3-80	3-22	2-47	0-41
Manitoba.....	32-09	4-17	4-04	4-26	2-64	2-48	0-50
Alberta.....	34-15	3-73	3-80	4-00	3-13	2-63	0-52
Quebec.....	35-34	5-45	4-83	3-57	2-62	2-20	0-43
Canada.....	37-60	4-94	4-45	3-70	2-69	2-29	0-48
Ontario.....	39-75	5-67	4-67	3-62	2-56	2-07	0-45
New Brunswick.....	40-62	4-77	4-73	4-05	2-67	2-31	0-40
Nova Scotia.....	41-01	4-34	4-46	4-27	2-73	2-37	0-43
British Columbia.....	44-94	2-68	3-20	3-35	3-16	2-94	0-79
FEMALES							
Prince Edward Island.....	16-34	4-90	5-70	3-01	1-93	1-61	0-79
Saskatchewan.....	18-89	5-01	4-47	3-33	2-06	1-83	0-80
Nova Scotia.....	19-08	4-93	4-75	3-40	1-93	1-82	0-77
Alberta.....	19-96	4-82	4-29	3-31	2-11	1-91	0-82
New Brunswick.....	23-09	5-70	4-44	3-81	2-09	1-67	0-66
Manitoba.....	23-72	5-92	4-24	3-33	1-96	1-95	0-73
Canada.....	24-39	5-89	4-80	3-40	2-00	1-81	0-68
Quebec.....	24-39	5-55	5-17	3-45	2-16	1-91	0-54
British Columbia.....	25-96	4-17	3-51	2-91	2-08	2-33	0-98
Ontario.....	26-48	6-66	4-89	3-41	1-89	1-65	0-55

The important feature of the above statement is that there is no apparent connection between the manner in which the reported weeks idle decreases from interval to interval and the percentage losing any time. The arrangement is based upon the *total* wage-earners in the different provinces and while the provinces have somewhat different industrial or occupational structures, this difference in structure is not very definite. The differentiation in the statement is not much more than a differentiation between random aggregates of individuals, i.e., the differential in percentage idle any time is due to many other causes as well as to industrial or occupational structure. On the other hand, when we make a similar arrangement of percentages idle but using occupational aggregates instead of provincial, we have a very different story. From the 1921 figures, 100 occupations were thus listed and arranged in ascending order of the percentages idle at any time, and the duration of idleness in intervals of 1-4 weeks, etc., was shown for each of them as above. It is not necessary here to show the results for the whole 100. Instead, certain representative groups will be taken from the figures for Canada as a whole instead of the various provinces.

VIII.—PERCENTAGES LOSING TIME AND PERCENTAGE DISTRIBUTION BY WEEK INTERVALS OF THOSE LOSING TIME (PERCENTAGE IN EACH INTERVAL DIVIDED BY LENGTH OF INTERVAL) IN CERTAIN OCCUPATIONS (ARRANGED IN ASCENDING ORDER OF PERCENTAGES LOSING TIME), CANADA, YEAR ENDED JUNE 1, 1921

Occupation	P.C. Losing Any Time	P.C. of Those Losing Time Divided by Length of Interval					
		1-4 Weeks	5-8 Weeks	10-13 Weeks	14-17 Weeks	18-26 Weeks	27 Weeks and over
Salesmen.....	21-5	7-01	3-72	3-55	2-02	1-78	0-52
Manufacturers—milk and cream products.....	28-3	5-06	4-78	4-62	3-36	2-15	0-36
Locomotive engineers.....	31-0	7-75	5-00	3-92	2-20	1-33	0-27
Linemen.....	31-5	6-51	3-64	3-04	2-52	2-42	0-44
Teamsters.....	38-2	5-71	3-92	4-02	2-51	2-16	0-45
Harness makers.....	38-5	5-76	4-58	3-00	2-61	2-00	0-56
Stonecutters.....	55-5	3-65	3-80	6-93	2-40	2-65	0-48
Roofers and slaters.....	60-6	3-18	5-49	4-18	2-68	2-80	0-42

There is no doubt whatever that the behaviour in this case is connected with the percentage losing any time. The two where more than 50 p.c. lost some time have the first interval smaller than the second and third. The behaviour will be further manifested in the following statement which first shows the duration periods of the different industrial groups in Canada in 1921 according to the percentage losing any time. In the second part of the statement the duration periods

are divided by the length of the duration interval (since the intervals are of unequal length) and arranged in ascending order of the percentages idle any time. These are then re-arranged into three groups, viz., (1) finance, clerical, commercial and service with 18.92 p.c. idle any time; (2) agriculture, transportation and manufacturing with 36.11 p.c. idle any time; (3) fishing, unspecified labourers, mining and building with 54.09 p.c. idle any time. These last three groups are then charted.

The chart shows that in the case of the first group (with 18.92 p.c. idle any time) the first interval (1-4 weeks) is much the largest, the succeeding intervals decreasing rapidly. In the case of the second group (with 36.11 p.c. idle) the first interval is smaller than in the case of the first group while the decrease from interval to interval is less rapid. In the case of the third group (where the number idle is more than half the wage-earners) the first interval is smaller than the second. Now if we went on increasing the percentage idle any time and charted each group, we would find the first interval becoming relatively smaller and the succeeding intervals larger until we came to such occupations as "longshoremen," where about three-quarters of the workers were idle at some period. In this case the largest group would not be the first or second but the middle group.

IXa.—PERCENTAGES LOSING TIME AND PERCENTAGE DISTRIBUTION BY WEEK INTERVALS OF THOSE LOSING TIME, BY OCCUPATION GROUP, CANADA, YEAR ENDED JUNE 1, 1921

Occupation Group	P.C. Losing Any Time	P.C. of Those Losing Time Losing					
		1-4 Weeks	5-8 Weeks	9-13 Weeks	14-17 Weeks	18-26 Weeks	27 Weeks and over
Agriculture.....	24.00	19.58	17.31	19.40	11.85	20.63	11.22
Fishing and logging.....	51.07	15.47	18.59	18.68	14.01	22.73	10.53
Mining.....	56.37	18.93	19.59	22.77	10.56	17.93	10.22
Manufacturing.....	45.12	22.64	19.00	18.66	9.98	17.85	11.28
Building.....	56.41	14.93	16.36	19.45	12.35	23.98	12.73
Transportation.....	34.49	23.30	18.03	17.78	10.26	19.57	11.06
Commercial.....	19.51	27.76	17.39	16.04	8.25	17.07	13.50
Finance.....	10.44	28.30	15.46	16.15	8.43	15.75	15.92
Service.....	21.02	20.49	17.02	17.32	9.72	19.30	16.12
Clerical.....	17.99	28.05	17.80	15.74	8.45	16.67	13.33
Labourers.....	53.27	16.31	16.80	18.42	11.06	23.22	14.19

IXb.—PERCENTAGES LOSING TIME AND PERCENTAGE DISTRIBUTION BY WEEK INTERVALS OF THOSE LOSING TIME (PERCENTAGE IN EACH INTERVAL DIVIDED BY LENGTH OF INTERVAL), BY OCCUPATION GROUP (ARRANGED IN ASCENDING ORDER OF PERCENTAGES LOSING TIME), CANADA, YEAR ENDED JUNE 1, 1921

Occupation Group	P.C. Losing Any Time	P.C. of Those Losing Time Divided by Length of Interval					
		1-4 Weeks	5-8 Weeks	9-13 Weeks	14-17 Weeks	18-26 Weeks	27 Weeks and over
Finance.....	10.44	7.08	3.87	3.23	2.11	1.75	0.61
Clerical.....	17.99	7.01	4.45	3.15	2.11	1.83	0.51
Commercial.....	19.51	6.94	4.35	3.21	2.06	1.90	0.52
Service.....	21.02	5.12	4.26	3.46	2.43	2.14	0.62
Agriculture.....	24.00	4.90	4.33	3.88	2.96	2.29	0.43
Transportation.....	34.49	5.83	4.51	3.56	2.57	2.17	0.43
Manufacturing.....	45.12	5.06	4.00	3.73	2.50	1.98	0.43
Fishing and logging.....	51.07	3.87	4.03	3.74	3.50	2.53	0.41
Labourers.....	53.27	4.08	4.20	3.68	2.77	2.58	0.55
Mining.....	56.37	4.73	4.90	4.55	2.64	1.99	0.39
Building.....	56.41	3.73	4.14	3.89	3.09	2.66	0.49

IXc.—PERCENTAGES LOSING TIME AND PERCENTAGE DISTRIBUTION BY WEEK INTERVALS OF THOSE LOSING TIME (PERCENTAGE IN EACH INTERVAL DIVIDED BY LENGTH OF INTERVAL) IN THREE OCCUPATION GROUPS, CANADA, YEAR ENDED JUNE 1, 1921

Occupation Group	P.C. Losing Any Time	P.C. of Those Losing Time Divided by Length of Interval					
		1-4 Weeks	5-8 Weeks	9-13 Weeks	14-17 Weeks	18-26 Weeks	27 Weeks and over
Finance, Clerical, Commercial and Service	18.92	6.45	4.35	3.26	2.19	1.94	0.55
Agriculture, Transportation and Manufacturing	36.11	5.56	4.55	3.71	2.60	2.09	0.43
Fishing and logging, Labourers, Mining and Building	54.09	4.04	4.29	3.82	2.90	2.54	0.51

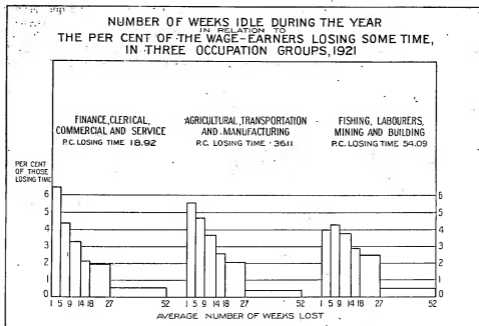


Chart 1

The method adopted with the 100 occupation groups already referred to was to take the averages of the duration frequency of the groups having the same percentages idle at some time and arrange the data in the order of size of these averages. When this was done there was no difficulty in seeing the behaviour of the frequencies. The smaller percentages idle for some time had larger percentages idle shorter periods; while the largest percentages idle had smaller percentages idle shorter periods. In fact, the periods idle clearly depended upon the percentage who lost any time. The interpretation of this dependence would seem to be a matter of importance, but as it is not immediately relevant to the present issue it will be postponed. The point that is pertinent at the moment is the fact that this dependence exists, and particularly that it exists when the data are arranged by occupation (or industrial) groups but not when arranged by random groups of individuals. In other words, *the number of weeks idle reported by the person to the enumerator is governed by his occupation, i.e., by a cause that is external to the person.* The nature of the dependence can best be understood by going back to the figures for all Canada. The following statement will make clear how the person answered the enumerator.

X.—NUMBER OF MALE WAGE-EARNERS LOSING TIME AND NUMBER AS PERCENTAGE OF
(a) TOTAL LOSING TIME AND (b) TOTAL WAGE-EARNERS, BY DURATION
INTERVAL, CANADA, YEAR ENDED JUNE 1, 1921

Interval of Duration of Idleness	Male Wage-Earners Losing Time		
	No. (1)	As P.C. of Total Losing Any Time (2)	As P.C. of Total Wage- Earners (3)
1-4 weeks.....	114,612	19.77	7.41
5-8 ".....	103,113	17.79	6.67
9-13 ".....	107,273	18.51	6.94
14-17 ".....	82,368	10.76	4.03
18-26 ".....	119,482	20.61	7.73
27 " and over.....	72,857	12.57	4.71
Total idle any time.....	579,655	100.00	37.49
Total wage-earners.....	1,545,894	-	100.00

If we now take the last column, i.e., the percentages as based upon the total number of wage-earners (instead of upon the total losing any time), and express the frequency of persons by week intervals as decimals instead of percentages we have Column-1 of Statement XI. Since the

person was asked how many weeks he lost during a limited period (52 weeks) it might be assumed that nobody lost more than 52 weeks; but this is not certain and it is better not to regard the total duration as being absolutely limited by the period 52 weeks.

XI.—PROBABILITIES OF BEING IDLE CERTAIN NUMBERS OF WEEKS AND DURATION OF IDLENESS EXPECTED FROM NORMAL FREQUENCY WHERE THE MEAN IS THE CENTRE OF ALL WAGE-EARNERS, CANADA, YEAR ENDED JUNE 1, 1921

Duration of Idleness	(1) Probability ¹	(2) Number of Standard Deviations ² from Centre of Wage-Earning Total	(3) Expected Duration (fit from line $y = 19.4x - 5.07$)
Less than 1 week.....	0.6251	0.319	Less than 1-12 weeks
" " 5 weeks.....	0.6992	0.522	" " 5-06 "
" " 9 ".....	0.7659	0.723	" " 9-00 "
" " 14 ".....	0.8353	0.975	" " 13-85 "
" " 18 ".....	0.8756	1.154	" " 17-32 "
" " 27 ".....	0.9529	1.674	" " 27-41 "
" " 52 ".....	1.0000		

¹ This probability is obviously derived from Statement X thus: losing no time or less than 1 week: 62.5 p.c. or 0.6251; losing less than 5 weeks: (62.51 + 7.41 = 69.92) 0.6992, etc.

² Reading from a table of normal frequencies 0.6251-0.5000=0.1251 represents 0.319 standard deviations from centre and so on, i.e. 12½ p.c. of the cases are included in 0.362 standard deviations from centre.

The comparison is between the actual and expected duration of idleness. The line of best fit through column 2 calculates the number of weeks that corresponds to a given number of standard deviations, the purpose of the calculation being to obtain the number of weeks represented by one standard deviation.

Now the best average number of weeks in a standard deviation would seem to be the best fit of the line of the first column through the third column, i.e., the best fit for the line $y = a + bx$ where y equals number of weeks and x the number of standard deviations. The constants so obtained are $y = -5.07 + 19.4x$. The fit is close enough to show that the number of weeks reported as lost has some connection with the standard deviation from the centre of the wage-earning group which, as already seen, is an occupation group, not a group of individuals. One standard deviation is equivalent to 19.4 weeks in the case of all the male wage-earners in Canada. If this is so, there is an attraction towards a centre but this centre is not the centre that would be caused by a casual reply of the person, but rather the centre of gravity of his occupation.

Going back now to the issue raised, the question was whether there was any danger that the correlation between the percentage idle on June 1 and the average number of weeks idle during the year was due to the tendency of all persons to say the same thing, or rather to reply with a random answer which would naturally have a central tendency. This question arose because of the fact that a perfect correlation between the factors which were found actually to have a high correlation would mean a constant number of weeks idle reported by all alike. The differentiation in the number of weeks reported by the various persons was what caused the defect from perfect correlation. That there is such a constant is undoubted, but the attraction to it as a centre is not due to a random reply but to the nature of the occupation. It is situated somehow at the heart of the occupation, but the "how" is difficult to explain. A much better fit to theory would have been obtained if a number of occupations having the same percentage idle some time had been averaged but the above fit is not bad. This at least is an explanation why the duration of idleness is dependent upon the proportion of the occupation who lose any time. Many plausible interpretations of this phenomenon could be advanced, in fact it is what was to be expected, but at this stage no interpretation will be offered. The fact is all that is required.

Now there is no reason why a person at one census should answer at random if he did not answer this way at another. The figures of 1931 are much more irregular than those of 1921 and thus not suitable for illustration, but it is easy to see that the main-tendency is the same. In fact the average number of weeks lost by those losing time is not a centre of frequency at all but a centre of gravity of the total weeks lost by all persons. The average weeks lost by all wage-earners is not a central point but an average deviation from the centre of frequency of the wage-earners which is situated in the heart of the occupation.

Taking a case where more than 50 p.c. were idle at some time, *viz.*, building and construction with 56.41 p.c., we have the following distribution:—

XII.—PROBABILITIES OF BEING IDLE CERTAIN NUMBERS OF WEEKS AND DURATION OF IDLENESS EXPECTED FROM NORMAL FREQUENCY WHERE THE MEAN IS THE CENTRE OF ALL WAGE-EARNERS IN THE OCCUPATION "BUILDING AND CONSTRUCTION", CANADA, YEAR ENDED JUNE 1, 1921

Duration of Idleness	Probability	Number of Standard Deviations from Centre of Wage-Earning Total	Expected Duration (fit from line $y = 14.7x + 4.04$)
Less than 1 week.....	0.4359	-0.161	Less than 1.67 weeks
" " 1 week.....	0.3201	0.050	" " 4.78 "
" " 2 weeks.....	0.0215	0.310	" " 8.60 "
" " 3 weeks.....	0.7222	0.589	" " 12.70 "
" " 4 weeks.....	0.7919	0.813	" " 15.99 "
" " 5 weeks.....	0.9272	1.455	" " 25.43 "
" " 6 weeks.....	1.0000		

The line here is $y = 4.04 + 14.7x$ and the fit is very good. The standard deviation from the centre of the occupation is 14.7 weeks, *i.e.*, idleness is closer to the heart of the occupation than it was when only 37.50 p.c. were idle at some time.

Summary of Results of Accuracy Tests.—1. It was laid down as an *a priori* condition that if the weeks idle reported for the year were accurate for aggregates of individuals, then (since the number reported idle on the specific date June 1 was assumed to be accurate in any case and since this data could be taken as fairly representative of the week around this date) June 1 should be a sample of the year subject to a constant bias due to the general trend of unemployment and also subject to such small errors as arise from variations in the seasonal nature of industrial, occupational and other aggregates. The form of the relationship that should exist between the data reported as on June 1 and those reported, in order to fulfil this condition, for the whole year was laid down before investigation of the data and it was demanded that the data should satisfy the conditions in this form. The data were then investigated under four different arrangements (i) 98 industrial groups, (ii) 98 occupation groups, (iii) 99 age groups and (iv) 534 urban groups. Under all four arrangements the conditions were fulfilled and especially under the age arrangement (omitting 10-15 years), the calculation of the year from June 1 was as close as would be obtained from a chance sample of any attribute that would be capable of ideal random sampling. This means that if no doubt had been cast upon the accuracy of the year's figure, the data for June 1, would have been shown to be a good cross-section of the year providing we had means of knowing the general trend of unemployment.

2. The next condition was that the constant bias of June 1 over the year, obtained by the calculation should conform to the bias shown by testimony independent of the census. Two such witnesses were called, *viz.*, the employment index from the monthly reports of firms collected by the Bureau of Statistics and the unemployment from month to month in trade unions from the reports of the Department of Labour. Both of these sets of data should show general trends fairly accurately. This condition was fulfilled most satisfactorily.

3. The third condition was that the errors of calculation should be mainly due to seasonal variation as between different industrial, etc., aggregates. The largest errors were tested and the history of the individual industries to which they pertained was examined for the year 1930-31 to see whether the situation in June as compared with the year differed more in these than in other industries. This condition also was satisfied.

4. Although no further test should have been necessary, the year's figures of 1921 were calculated from the June data of that year according to the formula used in 1931, to ascertain whether the relationship of the calculated results to the actual results was the relationship of the bias of June 1 over the year in 1931 to the bias in 1921. This condition too was satisfactorily fulfilled.

5. Still another test was made owing to observation of a peculiar correlation, *viz.*, that the percentage idle June 1, also the percentage idle at any time during the year and the average weeks idle of those who lost time were inter-correlated. Perfect inter-correlations would be possible

only if the total number of weeks idle were constant and there seemed to be danger that the correlations already obtained were due to the tendency for everybody to report the same thing, or rather for the replies to be strongly governed by a centre of frequency. It was necessary to see what this centre of frequency was. If it turned out that everybody, regardless of occupation, gave an answer that would lead to a symmetrical distribution around a central number of weeks, then a doubt would arise that the answers were merely random; if, however, the answers pointed to another centre which was caused by something external to the individual, then the tendency to answer the same thing was what was to be expected. Accordingly, an examination was made of the actual answers to the question, "How many weeks did you lose during the year?" There was no evidence of a central tendency when the answers were examined for groups of random individuals, but when examined for occupation groups; it was clear that the answer was governed by the condition of the occupation. The centre to which the answers were attracted was the centre of the occupation, idle and working combined. The greater the percentage losing some time, the greater the number of weeks lost by those losing time. The average weeks lost was a deviation from the centre of the occupation, *i.e.*, an external, not a psychological cause governed the replies of the person.

These five separate tests would seem to establish beyond doubt the point that the replies to the question "How many weeks did you lose during the year?" are accurate for aggregates of individuals, occupations, etc. How small the aggregate may be would naturally be the next step, but it is postponed for the following reason: The question of the size of aggregate for which the number of weeks lost during the year is reliable is mixed up with the question "For what size of group is June 1 representative of the year?" Even if no doubt had been cast upon the reliability of the duration, this question would still come up. Consequently a fuller investigation of the matter is made later on in connection with the question of sampling. There it will appear that no great reliance can be placed upon aggregates of less than 200.

PART B—PERMANENT FEATURES IN CENSUS DATA

Permanent fundamental features in the census data on unemployment, if this permanency is established, signify that these features are independent of time and place, or if dependent, are dependent in a permanent manner which can be expressed quantitatively. They must be fundamental to be of practical value. "Dependent in a permanent manner" simply means what is conveyed in the following illustration. Suppose for a given quantity A we receive M units of another quantity B (unconditionally). This is a permanent relationship. But suppose M depends upon another quantity C, so that when C changes, M also changes but in a definite and measurable manner, say N; then the relationship is still permanent and the knowledge is of practical value so long as C and N are known and so long as N does not change. Now, "permanent" must be interpreted in a relative sense. Strictly it means "unchangeable" but for practical purposes it means that the changes are so small that they are not significant within certain fixed periods or other limits, *e.g.*, if certain relationships established for unemployment changed so slowly that the changes would have no practical significance in a period of ten years and in a space equivalent to the difference in conditions between one province of Canada and another, then this relationship would be sufficiently permanent and satisfactory for practical purposes, because we have a census every ten years and this census measures the differences between provinces.

Now we must select our third quantity C so that it will be independent of time and space or related definitely to some known function of time and space. For example, if it shows a change of N for every unit of change in time such as one year, or in space such as the increase in the population, and if it is fairly certain that we know the changes in population, then we have an adequate measure for practical purposes. Can we determine beforehand what is or what is not a more or less permanent relationship? To answer this question we must lay down two sets of premises:—

- (1) The relationships that are based upon pure mathematical concepts without regard to concrete cases are permanent, *e.g.*, if a relationship is established on the basis of large numbers independently of what these numbers signify, then this relationship is permanent. Thus if unemployment depends upon the number of workers regardless of where or when or at what these persons work and if this relationship can be measured quantitatively, then

this relationship is very apt to be permanent, and a practical application of it can be made without hesitation.

(2) If the relationship depends upon the behaviour in concrete cases separated by space but acting at a given time, then the permanency of these relationships is questionable; but if it is found that the same relationship holds when separated by time except as corrected by a permanent function of time or a permanent factor as already mentioned, *e.g.*, depending on a pure mathematical concept, then this relationship is permanent after being thus corrected.

The relationships themselves must be definitely established. This is not exactly a question of permanency but rather of reliability. A relationship may be quite reliable as a passing phase, without being permanent. If it changes in a permanent manner it is of practical value, but if it is true only of that point of time its intrinsic value is small except in so far as it is instructive or an observation which leads to further investigation.

Relationship of Unemployment Data to the Size of the Group Investigated.—As already intimated, the chief purpose of the chapter is to investigate permanent features of the Census of Unemployment. The importance of this investigation lies in the fact that we have only decennial censuses on so large a scale, and the compilation of the material collected is so lengthy a task that the results are not available until a period ranging from six months to three or four years after the census date has elapsed. Unless these compilations have permanent values over and above their current interest, they may be said to be out of date before the results are known. If on the other hand they have permanent values which are applicable to other periods of time as well as the date of taking the census, then these are their most important values and they do not become obsolete.

Correlations such as have been discussed in connection with the question of reliability are very good in their place but they are very unsafe as guides to *permanent* relations. An equation of the form $y = a + bx$ may be true even permanently but it is of very little practical value unless we are sure that a and b do not change. Thus when y was taken to represent the average number of weeks lost during the year and x the percentage idle June 1, the correlation was found to be almost perfect both for 1931 and 1921 and presumably for any other year, but this does not carry us very far except as establishing a principle, *viz.*, that June 1 is a sort of sample of the year. The b and a are not the same for every year. The correlation might be perfect and still the same difficulty would arise. When, however, we know that b always equals $\frac{1}{B}$, B being the bias of

June 1 over the average of the year, then we have something permanent and practical so long as we have other means of knowing what that bias is. But an equation based upon the correlation between static features is unreliable as a measure of anything that changes with time unless the change itself is found to obey a permanent law.

What then is the basis of discovering anything permanent in census data? It is here submitted that one such basis is a relationship based upon size. If $y = mx$, where x is discharged of all content except its size, *i.e.*, its size as expressed in abstract numbers, then the relationship is permanent. Thus 2 is one-half of 4, no matter what 2 and 4 represent and time does not make any difference.

The first step, then, will be to investigate the extent to which the percentage unemployed is influenced by the size of wage-earner groups and of the number of persons unemployed—say on June 1. This is really a point in sampling. It is well known that the reliability of a sample varies with the square root of the size of the sample, size being the most important consideration.

To begin with, let us assume that the census data for both June 1 and the whole year are reliable, and that we are taking the unemployment of a specific date (like June 1) as a sample of the year. We know, of course, that this is a biased sample but let us assume that we have current data, like the unemployment in labour unions and the index of employment in firms, that will give us a fairly accurate idea of this bias. The question is, "What is the smallest number of persons for which such sample is reliable?"

If we regard the general relationship shown between June 1 and the rest of the year as expressed in the three sets of grouping—*viz.*, industrial, occupational and age—as satisfactorily close and are satisfied with the expectation that we can calculate the year's idleness from June 1, within five days for more than half the wage-earners, we can take this relationship and the correlation .97 as the criterion. The manner in which we are going to make the test is to take the

data of the 534 incorporated urban centres for which we know both the June 1 and the year's figures for males 20 years of age and over. The advantage of taking these centres is that we have a large range of sizes varying from no person idle on June 1 to several thousands. The criterion of size in this case should be the number of persons idle since they are the persons who are answering the question "How many weeks did you lose during the year?" Omitting 15 very exceptional cases the 519 centres were distributed according to number of males idle as follows:—

Number of males idle	Number of urban centres
Less than 25.....	55
25- 49.....	97
50- 74.....	95
75- 99.....	46
100-199.....	94
200 and over.....	132
Total.....	519

The distribution of the weeks idle according to the number idle June 1 is shown for each of these six groups of urban centres in the following series of statements which are really scatter diagrams. In each case the year's figures and June 1 were correlated and it should be observed how the correlation mounts with the size. The statements themselves indicate the correlation fairly well without further measurement. It is clear that the places with less than 25 persons idle on June 1 are too small for purposes of sampling and may be rejected at once. After this point it is useful to look at the relationship in two ways: (1) the relationship in the case of the individual towns; (2) that of the average of all the towns in the group. Although individually a group of 25-49 may be too small for sampling, the average of a number of places with 25-49 persons idle may show satisfactory relationship and this would serve practical purposes.

XIII.—SCATTER DIAGRAMS SHOWING FREQUENCY DISTRIBUTION OF URBAN CENTRES HAVING SPECIFIED NUMBERS OF MALE WAGE-EARNERS 20 YEARS OF AGE AND OVER NOT AT WORK JUNE 1, 1931, ACCORDING TO INTERVALS OF PERCENTAGE NOT AT WORK JUNE 1 IN RELATION TO AVERAGE WEEKS LOST BY MALE WAGE-EARNERS DURING YEAR ENDED JUNE 1, 1931

(a) URBAN CENTRES WITH LESS THAN 25 PERSONS NOT AT WORK JUNE 1, 1931

Average Weeks Lost by Male Wage- Earners	Percentage Not at Work June 1, 1931																																																Total
	0	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42	44	46	48	50	52	54	56	58	60	62	64	66	68	70	72	74	76 and over										
1.....		2	2	1																																							5						
2.....			2	5	1																																						8						
3.....					2	1	3		1																																		7						
4.....		1	2		1				1																																		5						
5.....			1	1		4	1																																				7						
6.....				2	1	2	1																																				6						
7.....						1																																					1						
8.....							1		1																																		2						
9.....						1	1		1																																		3						
10.....			1	2	1	1		1																																			6						
11.....							1	1																																			2						
12.....																																																	
13.....				1				1																																			2						
14.....																																												1					
Total..	1	8	13	7	12	8	4	1																			1																55						

$$c_p = 0.5818$$

$$c_p^2 = 0.3385$$

$$\sigma_p^2 = 0.6615$$

$$\sigma_p = 3.11$$

$$c_p = 0.5455$$

$$c_p^2 = 0.2976$$

$$\sigma_p^2 = 12.2824$$

$$\sigma_p = 3.50$$

$$xy \text{ corrected} = 4.7525$$

$$r_{xy} = .44$$

$$y = 0.49x + 2.01$$

XIII.—SCATTER DIAGRAMS SHOWING FREQUENCY DISTRIBUTION OF URBAN CENTRES HAVING SPECIFIED NUMBERS OF MALE WAGE-EARNERS 20 YEARS OF AGE AND OVER NOT AT WORK JUNE 1, 1931, ACCORDING TO INTERVALS OF PERCENTAGE NOT AT WORK JUNE 1 IN RELATION TO AVERAGE WEEKS LOST BY MALE WAGE-EARNERS DURING YEAR ENDED JUNE 1, 1931—Cont.

(b) URBAN CENTRES WITH 25-40 PERSONS NOT AT WORK JUNE 1, 1931

Average Weeks Lost by Male Wage-Earners	Percentage Not at Work June 1, 1931																				Total
	0	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	
1.....					1																76
2.....																					over
3.....																					
4.....																					
5.....																					
6.....																					
7.....																					
8.....																					
9.....																					
10.....																					
11.....																					
12.....																					
13.....																					
14.....																					
15.....																					
16.....																					
17.....																					
18.....																					
19.....																					
20.....																					
Total.....	1	3	10	7	13	1	6	9	12	6	5	3	2	1	2						97

$$c_s = 0.9794$$

$$c_s^2 = 0.9592$$

$$c_s^3 = 0.9140$$

$$c_s^4 = 0.8140$$

$$c_s^5 = 0.5052$$

$$c_s^6 = 0.2552$$

$$c_s^7 = 0.125655$$

$$c_s^8 = 3.50$$

$$c_s^9 = 5.8332$$

$$c_s^{10} = 52$$

$$c_s^{11} = 0.60$$

$$c_s^{12} = 0.08$$

XIII.—SCATTER DIAGRAMS SHOWING FREQUENCY DISTRIBUTION OF URBAN CENTRES HAVING SPECIFIED NUMBERS OF MALE WAGE-EARNERS 20 YEARS OF AGE AND OVER NOT AT WORK JUNE 1, 1931, ACCORDING TO INTERVALS OF PERCENTAGE NOT AT WORK JUNE 1 IN RELATION TO AVERAGE WEEKS LOST BY MALE WAGE-EARNERS DURING YEAR ENDED JUNE 1, 1931—Con.

(d) URBAN CENTRES WITH 75-99 PERSONS NOT AT WORK JUNE 1, 1931

	Percentage Not at Work June 1, 1931																				Total
	0	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	
1.....																					76
2.....																					over
3.....																					
4.....																					
5.....																					
6.....																					
7.....																					
8.....																					
9.....																					
10.....																					
11.....																					
12.....																					
13.....																					
14.....																					
15.....																					
16.....																					
17.....																					
18.....																					
19.....																					
20.....																					
Total.....	5	2	5	6	3	2	3	3	5	1	2	2	1	1	1	1	1	1	1	1	48

$c_x = 1.3478$
 $c_y = 1.8166$

$\sigma_x^2 = 20.2704$
 $\sigma_y^2 = 4.90$

$\sigma_x^2 = 12.8795$
 $\sigma_y^2 = 3.59$

xy corrected = 11.0257
 $r_{xy} = .68$

$b_y = 0.542 - 1.0$

XIII.—SCATTER DIAGRAMS SHOWING FREQUENCY DISTRIBUTION OF URBAN CENTRES HAVING SPECIFIED NUMBERS OF MALE WAGE-EARNERS 20 YEARS OF AGE AND OVER NOT AT WORK JUNE 1, 1931, ACCORDING TO INTERVALS OF PERCENTAGE NOT AT WORK JUNE 1 IN RELATION TO AVERAGE WEEKS LOST BY MALE WAGE-EARNERS DURING YEAR ENDED JUNE 1, 1931.—Con.

(1) URBAN CENTRES WITH 200 AND MORE PERSONS NOT AT WORK JUNE 1, 1931

[illegible]
$$c_x = 1.7424$$
$$C_p^{100} = 3.0360$$
$$\sigma_{\mu}^2 = 45.9185$$
$$\sigma_x = 6.78$$
$$c_s = 0.5530$$
$$c_v^t = 0.3058$$
$$\sigma_y^2 = 17.3836$$
$$\sigma_y = 4.17$$
$$r_p \text{ corrected} = 24.8320$$
 $r_{xy} = .88$
$$y = 0.54x - 2.31$$

¹ For the calculations, 8 exceptional cases (italics in the diagram) were omitted.

**XIV.—PERCENTAGES OF MALE WAGE-EARNERS 20 YEARS OF AGE AND OVER NOT AT WORK
JUNE 1, 1931 IN RELATION TO AVERAGE WEEKS LOST IN EACH PERCENTAGE
INTERVAL BY MALE WAGE-EARNERS OF STATEMENT XIII**

P.C. Not at Work June 1, 1931	Average No. of Weeks Lost by Male Wage-Earners						P.C. Not at Work June 1, 1931	Average No. of Weeks Lost by Male Wage-Earners					
	Statement XIII							Statement XIII					
	a	b	c	d	e	f		a	b	c	d	e	f
0.....	4.0	-	-	-	-	-	40.....	-	-	11.0	-	13.4	13.7
2.....	3.6	3.0	-	-	-	-	42.....	-	-	-	20.0	17.0	20.0
4.....	4.8	6.3	-	-	-	-	44.....	-	-	-	-	-	20.0
6.....	4.1	6.6	10.3	6.2	3.0	11.0	46.....	14.0	-	-	-	11.0	16.7
8.....	6.7	5.7	6.8	7.5	6.5	4.0	48.....	-	-	-	-	17.0	18.0
10.....	6.6	6.4	8.5	5.5	8.2	6.6	50.....	-	-	-	-	17.0	22.0
12.....	7.8	9.0	7.1	9.2	8.6	7.0	52.....	-	-	-	-	16.0	22.0
14.....	3.0	10.7	10.3	6.8	8.3	9.4	54.....	-	-	-	-	-	-
16.....	-	9.2	9.8	6.0	10.8	9.1	56.....	-	-	-	-	20.0	24.0
18.....	-	9.4	10.0	6.5	12.4	10.7	58.....	-	-	-	-	-	-
20.....	-	8.8	9.8	11.3	10.4	9.7	60.....	-	-	30.0	-	-	-
22.....	-	8.8	12.0	10.3	11.8	12.0	62.....	-	-	-	-	17.0	19.0
24.....	-	10.7	11.0	9.2	11.6	11.5	64.....	-	-	-	-	-	21.0
26.....	-	10.5	10.4	11.0	12.2	12.1	66.....	-	-	-	-	-	-
28.....	-	12.0	17.0	13.0	11.0	13.6	68.....	-	-	-	-	-	18.0
30.....	-	-	14.7	14.0	15.8	14.7	70.....	-	-	-	-	-	21.0
32.....	-	19.5	11.5	13.0	9.5	13.5	72.....	-	-	-	-	-	-
34.....	-	-	12.0	11.0	13.5	13.4	74.....	-	-	-	-	-	-
36.....	-	-	14.0	-	12.0	15.2	76 and over.	r = .85	r = .81	r = .79	r = .82	r = .85	r = .76
38.....	-	-	13.5	11.0	15.0	15.6							

**XV.—CORRELATION BETWEEN NUMBER NOT AT WORK JUNE 1 AND AVERAGE WEEKS LOST
DURING THE YEAR FOR SPECIFIED SIZE CLASSES OF URBAN CENTRES, YEAR ENDED
JUNE 1, 1931**

Number Not at Work June 1, 1931	Correlation for Individuals of the Groups (Statement XIII)	Correlation for the Average of Each Group (Statement XIV)	Number of Urban Centres
Less than 25.....	-.44	-.85	55
25 - 49.....	-.52	-.81	97
50 - 74.....	-.55	-.79	95
75 - 99.....	-.68	-.82	46
100 - 199.....	-.72	-.85	94
200 and over.....	-.88 ²	-.76	132
Total.....	-.60 ³	-.96 ¹	519 ¹

¹ Omitting 15 exceptional cases.

² 532 cases.

³ The size at which a satisfactory correlation is reached for individual items is 200; for averages, all the correlations are satisfactory.

Basis of Sampling for Unemployment.—Now for practical purposes it is necessary to obtain a basis of sampling where the sample is not the number idle but the number of wage-earners. A basis of sampling for unemployment is badly needed. It would be not only so expensive as to be prohibitive to make a frequent census or registration of unemployment but it would be absolutely impossible, since there are many obstacles apart from the magnitude of the task. Furthermore, this very magnitude would make it impossible to compile the results in time to be of use. A cheap method of sampling which would give results approximately accurate would also make it possible to release figures in a few days. If the approximation were reasonably close it would be fully as good as a complete enumeration since even the latter would involve questions of accuracy on which all persons are by no means agreed. One of these is the precise definition of an unemployed person—is he any person who is not working or must he fulfil certain other conditions before he can be considered unemployed? Under employment insurance schemes the person to be unemployed must have held a steady job and be capable of working at a steady job. The boy who has never had continuous employment and who can not report himself under any occupation or in connection with any industry, can not be considered unemployed. This is consistent with the census definition, but it is by no means generally accepted. On June 1, 1931, for example there were 470,000 not working, but these were all wage-earners. In addition to two and one-half million wage-earners there were one and one-third million other persons

gainfully occupied and about 800,000 of both sexes of working ages, including unmarried females and persons not at school and not in institutions, who were not working. It is easy to see that a difference in the definition of what an unemployed person is could easily make a difference of some hundreds of thousands, for if it meant everybody not working on that specific day it would add 800,000 plus the independent workers who had not anything to do on that day to the 470,000 recorded as not working. To obtain a figure of unemployment upon which everybody is agreed is clearly impossible, showing how absurd it is to insist upon meticulous accuracy in such matters. All we need is a reasonable approximation.

There is no doubt that a good sample can give us this reasonable approximation provided we have a sound basis of selection. The one figure which we seem to need more than any other is the percentage of the wage-earners not working on a specific date. Even if this did not give us the actual number not working except in so far as it led to a good *idea* of this number, it would be the most important figure since it is the probability of unemployment and therefore barometric.

Size of Sample.—To arrive at a basis of sampling for this figure (the percentage not working), the most hopeful method is to examine what this percentage has to do with the size of aggregates of wage-earners. As before we take the 534 incorporated urban centres of sizes varying from a hundred or less to over half a million. At once we are faced with a difficulty, *viz.*, that of breaking these up into suitable size groups. Unemployment may increase or decrease with the size of the wage-earner groups, but how? If we take them in equal intervals of size—*e.g.*, under 100; 100–199; 200–299, etc.—we assume that an equal interval of size corresponds to an equal interval of unemployment percentage, whereas this may not be true. If the percentage of unemployment is really dependent upon the size of the place there are many other factors to consider besides the kind of industry or the size of the industries in that place. To-day it is complicated by the fact of direct relief. The small place may have little unemployment either because it has only a few industries or occupations and these of a long established permanent character such as garages, teachers, store clerks, etc., or because the unemployed leave these little places for the larger centres, thus tending to make unemployment in the larger centres worse; or it may have more unemployment than the large centres owing to the break-down of new industries started. As a matter of fact, it will be seen that the small places are equally likely to be better or worse than the large cities. A single small place would give a very unreliable picture of unemployment, but the *aggregate* of a large number of these small places would give a true picture.

The method followed in arranging the 534 urban centres by size was to make the intervals of size depend upon the intervals of the standard deviation of the percentage idle on June 1; 2 p.e. idle being equivalent to 0.168 standard deviations. The size intervals thus arrived at were:—

Size Interval ¹	Number of Towns Represented	Size Interval ¹	Number of Towns Represented
80 and under.....	1	22,501 - 31,600.....	3
81 - 160.....	23	31,601 - 43,000.....	1
161 - 300.....	138	43,001 - 57,000.....	-
301 - 550.....	132	57,001 - 73,500.....	2
551 - 900.....	78	73,501 - 92,000.....	-
901 - 1,700.....	75	92,001 - 112,000.....	-
1,701 - 2,400.....	25	112,001 - 133,000.....	-
2,401 - 4,500.....	25	133,001 - 153,000.....	-
4,501 - 7,000.....	17	153,001 - 171,000.....	1
7,001 - 10,300.....	4	Over 171,000.....	1
10,301 - 15,800.....	4		
15,801 - 22,500.....	4		
		Total.....	534

¹Integral limits of interval.

The percentage not at work on June 1 according to these twenty-two different size groups is shown in the following chart. The average percentage not at work in each group is seen at the foot of the chart. With the exception of the first group it is apparent that there is a very slight variation from group to group and absolutely no trend upward or downward with the size. The largest cities show almost the average percentage idle on June 1, while the average of each size group corresponds to this average.

MALE WAGE-EARNERS 20 YEARS OF AGE AND OVER IN 534 URBAN CENTRES
BY SPECIFIED SIZE GROUPS
IN RELATION TO THE PER CENT NOT AT WORK JUNE 1, 1931

PC NOT AT WORK JUNE 1 1931	MALE WAGE-EARNERS BY SPECIFIED SIZE GROUPS															TOTALS
	50- 64	65- 79	80- 94	95- 109	110- 124	125- 139	140- 154	155- 169	170- 184	185- 199	200- 214	215- 229	230- 244	245- 259	260- 274	
0	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	3
2	II	II	II	II	II	II	II	II	II	II	II	II	II	II	II	9
4	III	III	III	III	III	III	III	III	III	III	III	III	III	III	III	22
6	IV	IV	IV	IV	IV	IV	IV	IV	IV	IV	IV	IV	IV	IV	IV	30
8	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	32
10	VI	VI	VI	VI	VI	VI	VI	VI	VI	VI	VI	VI	VI	VI	VI	48
12	VII	VII	VII	VII	VII	VII	VII	VII	VII	VII	VII	VII	VII	VII	VII	54
14	VIII	VIII	VIII	VIII	VIII	VIII	VIII	VIII	VIII	VIII	VIII	VIII	VIII	VIII	VIII	37
16	IX	IX	IX	IX	IX	IX	IX	IX	IX	IX	IX	IX	IX	IX	IX	46
18	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	32
20	XI	XI	XI	XI	XI	XI	XI	XI	XI	XI	XI	XI	XI	XI	XI	28
22	XII	XII	XII	XII	XII	XII	XII	XII	XII	XII	XII	XII	XII	XII	XII	31
24	XIII	XIII	XIII	XIII	XIII	XIII	XIII	XIII	XIII	XIII	XIII	XIII	XIII	XIII	XIII	25
26	XIV	XIV	XIV	XIV	XIV	XIV	XIV	XIV	XIV	XIV	XIV	XIV	XIV	XIV	XIV	30
28	XV	XV	XV	XV	XV	XV	XV	XV	XV	XV	XV	XV	XV	XV	XV	19
30	XVI	XVI	XVI	XVI	XVI	XVI	XVI	XVI	XVI	XVI	XVI	XVI	XVI	XVI	XVI	16
32	XVII	XVII	XVII	XVII	XVII	XVII	XVII	XVII	XVII	XVII	XVII	XVII	XVII	XVII	XVII	12
34	XVIII	XVIII	XVIII	XVIII	XVIII	XVIII	XVIII	XVIII	XVIII	XVIII	XVIII	XVIII	XVIII	XVIII	XVIII	9
36	XIX	XIX	XIX	XIX	XIX	XIX	XIX	XIX	XIX	XIX	XIX	XIX	XIX	XIX	XIX	8
38	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	9
40	XXI	XXI	XXI	XXI	XXI	XXI	XXI	XXI	XXI	XXI	XXI	XXI	XXI	XXI	XXI	3
42	XXII	XXII	XXII	XXII	XXII	XXII	XXII	XXII	XXII	XXII	XXII	XXII	XXII	XXII	XXII	5
44	XXIII	XXIII	XXIII	XXIII	XXIII	XXIII	XXIII	XXIII	XXIII	XXIII	XXIII	XXIII	XXIII	XXIII	XXIII	2
46	XXIV	XXIV	XXIV	XXIV	XXIV	XXIV	XXIV	XXIV	XXIV	XXIV	XXIV	XXIV	XXIV	XXIV	XXIV	3
48	XXV	XXV	XXV	XXV	XXV	XXV	XXV	XXV	XXV	XXV	XXV	XXV	XXV	XXV	XXV	2
50	XXVI	XXVI	XXVI	XXVI	XXVI	XXVI	XXVI	XXVI	XXVI	XXVI	XXVI	XXVI	XXVI	XXVI	XXVI	1
52	XXVII	XXVII	XXVII	XXVII	XXVII	XXVII	XXVII	XXVII	XXVII	XXVII	XXVII	XXVII	XXVII	XXVII	XXVII	1
54	XXVIII	XXVIII	XXVIII	XXVIII	XXVIII	XXVIII	XXVIII	XXVIII	XXVIII	XXVIII	XXVIII	XXVIII	XXVIII	XXVIII	XXVIII	1
56	XXIX	XXIX	XXIX	XXIX	XXIX	XXIX	XXIX	XXIX	XXIX	XXIX	XXIX	XXIX	XXIX	XXIX	XXIX	1
58	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	1
60	XXXI	XXXI	XXXI	XXXI	XXXI	XXXI	XXXI	XXXI	XXXI	XXXI	XXXI	XXXI	XXXI	XXXI	XXXI	1
62	XXXII	XXXII	XXXII	XXXII	XXXII	XXXII	XXXII	XXXII	XXXII	XXXII	XXXII	XXXII	XXXII	XXXII	XXXII	1
64	XXXIII	XXXIII	XXXIII	XXXIII	XXXIII	XXXIII	XXXIII	XXXIII	XXXIII	XXXIII	XXXIII	XXXIII	XXXIII	XXXIII	XXXIII	1
66	XXXIV	XXXIV	XXXIV	XXXIV	XXXIV	XXXIV	XXXIV	XXXIV	XXXIV	XXXIV	XXXIV	XXXIV	XXXIV	XXXIV	XXXIV	1
68	XXXV	XXXV	XXXV	XXXV	XXXV	XXXV	XXXV	XXXV	XXXV	XXXV	XXXV	XXXV	XXXV	XXXV	XXXV	1
70	XXXVI	XXXVI	XXXVI	XXXVI	XXXVI	XXXVI	XXXVI	XXXVI	XXXVI	XXXVI	XXXVI	XXXVI	XXXVI	XXXVI	XXXVI	1
72	XXXVII	XXXVII	XXXVII	XXXVII	XXXVII	XXXVII	XXXVII	XXXVII	XXXVII	XXXVII	XXXVII	XXXVII	XXXVII	XXXVII	XXXVII	1
74	XXXVIII	XXXVIII	XXXVIII	XXXVIII	XXXVIII	XXXVIII	XXXVIII	XXXVIII	XXXVIII	XXXVIII	XXXVIII	XXXVIII	XXXVIII	XXXVIII	XXXVIII	1
76	XXXIX	XXXIX	XXXIX	XXXIX	XXXIX	XXXIX	XXXIX	XXXIX	XXXIX	XXXIX	XXXIX	XXXIX	XXXIX	XXXIX	XXXIX	1
TOTALS	23	138	132	78	75	25	25	17	4	4	4	3	1	2	1	534

AVERAGE PER CENT NOT AT WORK

240 106 107 99 101 108 122 88 119 115 125 103 113 120 160 100 110

Chart 2

According to this, a basis of sampling is furnished by taking all the urban centres within one of the size groups. Any one of the size groups would do but there are two further considerations—economy on the one hand and on the other, an assurance that the aggregate of the cities or towns

of the group would represent a sufficient variety of industries. The most economical group would be the third, *viz.*, that with 161-300 wage-earners. It will be seen that the average unemployment of this group is very nearly the average for the whole 534. There are 138 small towns in this group and it will be seen later that they are spread all over Canada with a suitable representation in each province. They have an aggregate of about 32,000 wage-earners, certainly a large enough sample. There are several reasons why these would be desirable as samples. The chief reason is that they are small enough to be easily enumerated. The town clerk or the postmaster or any other suitable person could easily report the number unemployed in one of these on a specified day each month, since everybody knows practically everybody else in these small towns. In any case the aggregate of these 138 places could be used as a sample for monthly figures, two or three sets being used for, say, yearly figures. The distribution of unemployment in these 138 places will be better seen as follows:—

XVI.—URBAN CENTRES WITH 161-300 MALE WAGE-EARNERS 20 YEARS OF AGE AND OVER, JUNE 1, 1931, AND DISTRIBUTION ACCORDING TO PERCENTAGE NOT AT WORK JUNE 1, IN INTERVALS OF 2 P.C. AND CUMULATIVELY, WITH THE PROBABILITIES

Interval of P.C. Not at Work June 1, 1931	No. of Urban Centres	Interval of P.C. Not at Work June 1, 1931	Cumulative No. of Urban Centres	Probability
Less than 2.....	1	Less than 2.....	1	.007
2 - 3.....	5	" " 4.....	6	.043
4 - 5.....	5	" " 6.....	11	.080
6 - 7.....	6	" " 8.....	17	.123
8 - 9.....	10	" " 10.....	27	.196
10 - 11.....	5	" " 12.....	32	.232
12 - 13.....	15	" " 14.....	47	.341
14 - 15.....	7	" " 16.....	54	.391
16 - 17.....	10	" " 18.....	64	.464
18 - 19.....	12	" " 20.....	76	.551
20 - 21.....	9	" " 22.....	85	.616
22 - 23.....	10	" " 24.....	95	.658
24 - 25.....	6	" " 26.....	101	.732
26 - 27.....	6	" " 28.....	107	.775
28 - 29.....	4	" " 30.....	111	.804
30 - 31.....	5	" " 32.....	116	.841
32 - 33.....	6	" " 34.....	122	.884
34 - 35.....	3	" " 36.....	125	.906
36 - 37.....	2	" " 38.....	127	.920
38 - 39.....	2	" " 40.....	130	.942
40 - 41.....	2	" " 42.....	132	.957
42 - 43.....	2	" " 44.....	134	.971
44 - 47.....	1	" " 46.....	134	.971
50 - 51.....	1	" " 48.....	135	.978
52 - 53.....	1	" " 50.....	135	.978
62 - 63.....	1	" " 52.....	136	.986
Total.....	138	" " 54.....	137	.993
Average p.c. unemployment.....	20.1	" " 56.....	137	.993
		" " 58.....	137	.993
		" " 60.....	137	.993
		" " 62.....	137	.993
		" " 64.....	138	1.000
Average, 534 urban centres.....	21.7	Standard deviation.....	11.4	

¹Integral limits of interval.

Diversity of Sample.—The distribution around the average in the 138 places is thus seen to be sufficiently symmetrical. They have the same standard deviation of percentage idle as the total of the 534 towns, thus showing that they have the same variety of conditions of unemployment as the total. Theoretically they would seem to be quite satisfactory as a sample, in fact unusually so. It now remains to see whether they satisfy another condition which ordinary common sense at least would require, *viz.*, do they have a sufficient variety of industries and a satisfactory distribution of these industries to be a cross-section of the country? To ascertain this fact, use was made of such sources of information as Bradstreet's which for every post office gives the number of the different kinds of industrial establishments. Clearly it is impossible to give the exact number of workers in each industry as on June 1, but the number of each kind of establishment for the month of June, 1931, when this number is large and when it is for places of approximately the same size is a fairly good representative figure. In this connection one point should be mentioned. It is not necessary that the industries in these 138 places should be distributed exactly as in all Canada—this would be to the good, but it is not essential. A sufficient diversity in the industries so as to insure an adequate number of conditions of unemployment

would seem to be all that is necessary. Already it has been mentioned that they provide the desired diversity in geographical location which would take care of such matters as seasonal variations. The large numbers of the localities and the fact that in the aggregate they show very nearly the same unemployment as all Canada would make them a good sample in any case. Any doubt as to their situation in regard to movement of population is taken care of by the last-mentioned fact. That their showing the very nearly same average unemployment as the rest of Canada is not a mere coincidence is clearly seen by the distribution of the figures in Chart 2 and the following statement. The fact that the different aggregates of places of equal size show the same unemployment is here submitted as proof of the validity of the test; the dependence upon size is a permanent and reliable feature, which permanency outweighs other considerations.

For a list of the 138 places with the population in 1931, the number of wage-earners, the number not working on June 1, the percentage not working and the number of each kind of establishment, see Table 16, page 315.

**XVII.—NUMBER OF INDUSTRIAL ESTABLISHMENTS, BY INDUSTRY GROUP, ACCORDING TO
BRADSTREET'S, 1931, IN THE 138 URBAN CENTRES HAVING 161-300 MALE
WAGE-EARNERS 20 YEARS OF AGE AND OVER, JUNE 1, 1931**

Industry Group	Number of Establishments	Remarks
Total	6,685	
Agriculture	14	Naturally, agriculture and the two following groups have a low representation in urban centres.
Forestry, fishing, and trapping	7	There are 231 establishments with over 15 employees in Canada.
Mining, quarrying, etc.	16	There are 225 establishments employing more than 15 and 2,397 altogether in all Canada.
Manufacturing	890	27.5 p.c. of total establishments (other than trade) as compared with 23.6 p.c. of all wage-earners in Canada, and 24,501 of all sizes.
Electric light and power	13	96 establishments with over 15 employees in Canada.
Construction	375	1,127 establishments with over 15 employees in Canada.
Communication	8	67 establishments with over 15 employees in Canada.
Transportation	419	346 establishments with over 15 employees in Canada, including warehousing and storage.
Warehousing and storage	3	
Trade	3,457	The number is large on account of the smallness of the establishments. In all Canada there were only 826 establishments with more than 15 employees as compared with a total of 138,143 of all sizes.
Finance, insurance	3	This figure does not include branches of banks, 138 of which at the very least could be added.
Service	1,480	22.1 p.c. of the total establishments as compared with 22.8 p.c. of the total wage-earners in Canada being engaged in "Service".
Public administration	4	
Professional	7	This does not include schools or churches, which would add at least 300 establishments to the figure.
Business	1	
Recreational	84	
Custom and repair	561	This number may seem large—due in part perhaps to the difficulty of distinguishing between some custom and repair establishments and manufacturing. In all Canada there were only 276 with over 15 employees including personal service as well.
Personal	721	"Establishments" excludes, of course, the large number of domestic servants.
Library	2	These are only commercial, rental libraries. The figure does not include public libraries.

Sampling in Occupation.—Now what is perhaps of even greater importance than sampling localities for the sake of obtaining figures of unemployment is sampling industries. The Dominion Bureau of Statistics receives monthly reports from industrial establishments giving the number on pay rolls at the end of the month. Naturally every firm in Canada is not included and there is a specific exclusion of firms with less than 15 employees. A monthly index number for each industry and for the aggregate of the industries is built from these reports. Now two questions in particular arise: (1) Does the exclusion of the firms with less than 15 employees bias or invalidate the index numbers? (2) Does the fact that all industries are not equally represented invalidate the index numbers? To these must be added a still more important question: If these firms were asked periodically for the unemployment situation among their employees what prospects would there be of obtaining figures representative of Canada as a whole? Again the question of the relationship of the data to size is taken as the basis of an answer to these questions.

Since it was impossible to obtain a sufficient number of different industry groups or the data as on June 1 for occupation groups, the vital requirement in this case was deemed to be groupings according to what the persons are doing rather than where they are situated, as in the case of the

data on urban centres already examined. Accordingly 400 occupation groups differentiated by the average weeks idle (instead of idle June 1) were divided into size groups on the basis of the standard deviation of the weeks idle. These are charted below.

MALE WAGE-EARNERS 20 YEARS OF AGE AND OVER BY PROVINCES AND SPECIFIED SIZE INTERVALS IN RELATION TO THE AVERAGE WEEKS LOST BY THOSE LOSING TIME FOR SPECIFIED OCCUPATIONS 1931																			
AVERAGE WEEKS Lost by those losing Time	MALE WAGE-EARNERS BY SPECIFIED SIZE GROUPS																	TOTALS	
	Unknown 900	95- 200	241- 400	401- 600	601- 1000	1001- 3000	3001- 5000	5001- 6700	6701- 14000	14001- 20000	20001- 25000	25001- 30000	30001- 40000	40001- 50000	50001- 60000	60001- 75000	75001- 85000		85001- 99000
1																			
2																			
3																			
4	I																		I
5																			
6	I																		I
7																			
8																			
9	I																		I
10	I	I																	2
11																			4
12				I	II														I
13																			5
14		I	I		III														9
15		I	III	III		I													8
16		I	III	III	I														15
17	II	III	II	II	III	I		I											25
18	I	I	II	III	III	III	III	II											26
19		I		III	III	III	III	II											32
20	I	I	I	III	III	III	III	III	I										41
21	I	I	III	III	III	III	III	III	I	II									38
22		III	III	III	III	III	III	III	II										45
23		III	III	III	III	III	III	III	II										43
24	III	I	III	III	III	III	III	III	II										25
25	III	I	III	II	III	III	III	III	I										16
26	II	III	III	II	III	III	III	III	I										15
27				III	III	III	III	III	II										17
28	I	I	III	I	III	III	III	III	I										9
29		II		III	III	III	III	III	I										9
30	II			I	III	III	III	III	I										5
31	II			I	III	III	III	III	I										3
32	I		I	I															I
33			I																I
34				I															I
35																			
36																			
37	I																		I
38																			
39																			
40																			
41																			
42																			
43	I																		I
TOTALS	25	29	38	77	87	58	35	22	14	4	4	4		I			I	I	400

AVERAGE OF THE AVERAGE WEEKS LOST BY THOSE LOSING TIME FOR EACH SIZE GROUP
23.3 21.3 22.2 21.8 22.2 21.8 22.4 22.3 22.5 25.5 23.5 25.8 25.0 25.0 27.0

Chart 3

It is seen that the occupation groups behave somewhat differently from the town groups in that there is a correlation between weeks idle and the size—the larger the size the greater number of weeks idle. However, when averaged as shown at the foot of the chart, the dependence upon size is within narrow limits. On the whole the differentiation by groups of the same size furnishes a good basis for sampling. Further it is reasonable to suppose that the correlation with size is of a permanent nature and that if one of these size groups were sampled, suitable corrections could be made for the size. The correlation was tested and found to be linear, the coefficient being .88 and giving an equation of $y = 0.32x + 20.94$, where y is the weeks idle and x the size interval number 1, 2, 3, etc., as shown in the chart. The standard deviation of the weeks idle, when taken as between the averages of the group was only 1.77 weeks, showing how narrow the limits of variation for different sizes really are. Furthermore, the high correlation shows that there is very little differentiating these size groups except that the smaller sizes under-state the period idle and the larger over-state. Calculating the weeks from the above equation we have the following (omitting the first group which is clearly exceptional).

XVIII.—CALCULATED AND ACTUAL NUMBER OF WEEKS LOST, BY SIZE GROUPS, ACCORDING TO NUMBER OF WAGE-EARNERS FOR 400 OCCUPATIONS, CANADA, YEAR ENDED JUNE 1, 1931

Size Group ¹	Weeks Lost		Size Group ¹	Weeks Lost	
	Calculated	Actual		Calculated	Actual
1.....	21.3	21.3	10.....	24.1	23.5
2.....	21.6	22.2	11.....	24.5	25.8
3.....	21.9	21.8	12.....	24.8	-
4.....	22.2	22.2	13.....	25.1	25.0
5.....	22.5	21.8	14.....	25.4	-
6.....	22.9	22.4	15.....	25.7	-
7.....	23.2	22.3	16.....	26.1	25.0
8.....	23.5	22.5	17.....	26.4	27.0
9.....	23.8	25.5			

¹ Size groups numbered from second one on (see Chart 3).

The standard deviation of the averages when cleared of the trend, as already indicated by the correlation, etc., is only 0.83 weeks or about 5 days. There would seem to be no great difficulty in correcting for size of industry if a sample were required. In fact, taking the middle (or a middle) size would seem to serve the purpose. It is important, however, to notice that a slight bias is caused by the size, how slight may be judged from the very wide interval of size that is thus taken. As before, any one of these groups could be taken as the sample, but a middle size is preferable. The suggestion is that to all firms of a certain size a questionnaire be sent periodically asking the state of unemployment among their employees, the answers to which could be accepted as representative.

If the above considerations are sound, it is clear that the omission of the firms with under 15 employees is not a detriment to the validity of the employment index—rather, this omission is a very wise precaution, since these small firms are more numerous than all the remainder taken together. The indications are clear that the aggregate of these firms, if they were all represented would show the same employment as the remainder, while if they were only partially represented they would seriously bias the whole. Consequently their omission is in the interests of accuracy as well as economy. The fact that the small firms are apt to under-state would not invalidate this conclusion, since the very small firms (as indicated in the first column of the chart) would also tend to slight over-statement. In any case the difference between the results of one size and of another is so slight, i.e., the bias is so slight, that it would hardly affect the index of employment—not nearly as much as would a partial enumeration of these small firms.

Summary of Results of Investigation of Sampling.—Two facts of great practical value have been disclosed by the foregoing examination of the relationship of unemployment to the size of wage-earner groups: (1) that a basis of sampling is provided because of the constancy of unemployment as between different size groups; (2) that the most expensive and difficult sources of information can safely be neglected in periodical questionnaires. An important point that must not be overlooked is that either in sampling or regular questionnaires *it is better to obtain a complete enumeration of firms, etc., of the same size than a partial enumeration of firms of*

different sizes, even if the latter embraces a far greater number of persons. The worst kind of either sampling or enumeration would be to take different proportions of each size group—aggregate them and use them as a sample or the basis of an index. It is here strongly suggested that precaution in this respect is more important than any other form of precaution, *e.g.*, precautions about including varieties of seasonal elements. Precautions like the latter are dangerous because it involves a begging of the question. Not only are the same occupations apt to show different seasonal features in different years, but they are also apt to show these differences in the same year for different places. Precautions like these can not be controlled, while the consideration of size can be controlled. If we knew that a complete enumeration could be made for a certain size and not for other sizes, it would be better to take this size alone and omit the rest. This would also have the advantage of being economical and conducive to timeliness. Even when all firms are enumerated as by the Dominion Bureau of Statistics it would be well to take the size of firms that was most completely represented and arrange an index on the basis of these firms. This index could be prepared first and would probably be more accurate than the complete one. For safety, a moderate size would be preferable to either a very large or a very small size; further, it would be easier to get complete representation of a moderate size than for a small.

Conclusions on Permanent Values of Census Data on Unemployment.—As frequently mentioned, the Census of 1931 showed unemployment as measured by four criteria: (1) unemployment on a certain day (June 1) as a sample of the year; (2) number and percentage of weeks lost during the year; (3) number and percentage of the wage-earners losing *any* time throughout the year. The most striking feature of our study has been found to be the peculiar relationship of 2 to 3. The conclusion is that the behaviour of these two criteria in conjunction throughout different groups of workers such as occupation groups, age groups, etc., *i.e.*, over *space* in a single year is the same as that over *time* in one group taken individually over a period of at least one year. One valuable criterion (4), not mentioned with the other three is the number throughout the year losing 1-4 weeks, 5-8 weeks and so on. Similar information was given in 1921. This, of course, is a behaviour over time. Again, we have the index of employment from reports of firms, this information being collected independently of the census. In Appendix 1 we show that the same story is told by all these different sources of information, the initial difficulty being to interpret this story. It is believed that the interpretation in Appendix 1 is the right one.

We shall consider the significance of a classification over space that indicates what is happening over time. The past is often a sealed book for want of data. Where we have data, incomparability of classification renders impossible or at least unsafe the tracing of the evolution of such attributes as unemployment. If, with the enormous amount of data rendered available by our present improved machinery, we can trace this evolution by means of the inter-relationship of groups in the same year where comparability is perfect, we have solved an otherwise unsolvable problem.

In describing the findings on which the above is based it will be necessary to refer frequently to Appendix 1 where the mathematical calculations are made. However, there are features in this chapter which themselves demonstrate (1) that an abstraction like mechanical size determines the homogeneity of the data on unemployment, and (2) the relationship of space to time as dimensions of unemployment. When we take the wage-earners as a whole and find that the percentage idle on June 1 corresponds to the percentage of 52 weeks represented by the average number of weeks lost during the year, we are relating space to time. This is really what we do when we take a certain day as a sample of the year. We could not logically do so if we did not assume that space and time were merely two manifestations of the same thing. The mere coincidence of the two in only one case like the average for all wage-earners might occur by accident, but when we find the same thing occurring in hundreds of cases—ages, industries, occupations, localities, etc., we know that the chances of this happening by accident are practically nil.

But it is not enough to know that space and time are inter-related; we also wish to know how they are related. Criterion 1 above, is found to agree with criterion 2 with the proper bias expected of the last day of a year of falling trend compared with the average of the whole year. Now the most significant relationships discovered were those of 3 to 2 and 4. It was found that the proportion losing no time throughout the year correlated first with the time lost by all wage-earners during the year and secondly with the time lost by wage-earners

losing any time throughout the year. Not only this, but it was found that the individuality of different groups, revealed by such defects from perfect correlation as occurred, had a definite or constant meaning. The greater the proportion losing no time the smaller the average number of weeks lost—with certain exceptions which brought the correlation in the case of 116 occupation groups down from 1.00 to .97. The question was: "What was the nature of these exceptions?" From the week of greatest employment to the one with least, persons who hitherto had lost no time were being thrown out of employment. This would cause a *variability* in the percentages employed from week to week. Let us arrange the weeks of the year in order so that they descend from the week of greatest employment to the week of least employment. The measure of variability in employment from week to week is the standard deviation. In the same way as we measure cloth in yards, water in gallons and tea in pounds, we measure frequencies in standard deviations. Now if there was only one period after the beginning of the year at which persons were thus thrown out and they were then thrown out in large numbers it would make a greater standard deviation than if the same number were thrown out at several different periods, the more periods—the total number thrown out remaining the same—the smaller the standard deviation. The number of standard deviations in the total range between the high and low months, therefore, gives the number of periods of change. Now it was in this way that the individuality of occupations, etc., which brought the correlation from 1.00 to .97 was shown. They varied from those having less than 2 periods in the year to those having 4 or more—but most of them remained very nearly constant at 2.9 changes, this constancy causing the very high correlation of .97. However, the individuality of those which so varied disclosed facts of first importance. It was these changes that made the difference in the number losing 1 week, 2 weeks, etc., throughout the year. If there had been only 1 change and that in the first week of the year, then all those thrown out of employment by this change would have been idle the remainder of the year, the rest losing no time; if there were 5 changes the total number thrown out by all remaining the same, practically all the wage-earners would lose some time while the loss of time was distributed very favourably from the point of view of those losing time. It must be noticed that this is a factual, not a theoretical or speculative, explanation. Again, if the persons dropped from employment were dropped at the beginning of the year this would be reflected in a high number of weeks lost by the total wage-earners in industries, etc., unless the persons thrown out left the ranks of wage-earners, or the industry or occupation before the date of the census; if at the end of the year, this would be reflected in the low number of weeks lost. In Canada we know that persons thus dropped are dropped in the winter season. Our census year is from June to June so that the greatest drop occurred at the middle of the year. Hence we have in some industries and occupations the abnormally high percentage losing about 26 weeks. The index of employment of the Dominion Bureau of Statistics shows the months in which drops occur. Our census figures were compared with these, the same calculations being made with the index and the census figures, and they were found to agree. We have thus established a link between the census taken every ten years and a set of statistical data collected monthly. It is difficult to imagine results more important than this.

The story of the conditions of employment in industries, etc., revealed by this useful standard of measurement is told in most of the remaining chapters of this monograph. It is in respect to these changes that industries, occupations, ages, localities, etc., differ most significantly. This being the case we have a basis of classification and this classification is shown in Chapter XI.

If we have thus established a correlation between behaviour in space and that in time over a period of one year, why not over a longer period? This question seems capable of answer. If we take thousands of varieties of groups—in short, a sufficient number to display all the variations that can take place over a long period of time and find the true significance of behaviour from group to group—we have the means of tracing the evolution of this behaviour over a long period of time. We make here only one important application.

The thesis will be remembered that if the persons thrown out of employment were thrown out all at once and at the beginning of the year, this would be reflected in a high number of weeks lost by that particular group during the year, *unless the workers so thrown out left the ranks before reporting to the census*. There are many ways in which they could have done so. In the case of an industry they might have found employment in another industry and reported this later industry at the census. In this case the original industry would show a low rate of unemployment

and the second industry a high. Now we have a number of industries showing similarity in average number of weeks lost during the year but difference in the number of changes throughout the year. When we have an industry showing a low rate of unemployment but a small number of changes we can not say we have *proved* that the low rate was because the persons thrown out had left the industry, but we have a strong presumption that this was the cause—particularly when we know that the few unemployed persons who remained lost more time than the unemployed in an industry where the average unemployment for all its wage-earners was much greater. In fact, the presumption is so strong that it amounts to certainty. *Per se*, however, it is only a presumption. But, when we take in conjunction with it certain cases where we *know* this is the cause and find the behaviour similar to that in the type of industry mentioned, the matter becomes more than a presumption. The younger and older ages which we *know* are lopped off behave in the same way, *i.e.*, they have lower unemployment *because* they have fewer changes. The provinces which we *know* have lost a large number of wage-earners by emigration behave in the same way. Main industries and occupations which we *know* to show lower unemployment because the workers thrown out of employment are reporting in other industries behave in the same way. Therefore, if a certain industry group behaves in this way why doubt that it is from the same cause? To doubt involves the difficulty of explaining why the few unemployed persons still attached to the industry lost an appalling number of weeks throughout the year. These unfortunates were those who failed to procure re-employment in another industry and consequently regarded themselves as still attached to that industry in which they worked the first part of the year. If this is true over a period of one year, why not longer? Have so-called strong industries not become strong by throwing out their weaker members, the members in this connection being occupations not individuals? This is demonstrated in Chapters III and IV where it is shown that the individuality of industries, as contrasted with occupations, is displayed in their tendency, as they grow stronger, *i.e.*, as they show less and less unemployment, to narrow their number of changes throughout the year or, which is the same thing, to increase the proportion of those losing no time while those losing time lose a great deal. This is the opposite of what is shown in occupations except in the case of occupations which are at the same time industries or strongly-unionized occupations.

CHAPTER II

POPULATION AND REGIONAL SETTING OF EMPLOYMENT

PART A—RELATIONS BETWEEN TOTAL POPULATION, POPULATION IN GAINFUL OCCUPATIONS AND WAGE-EARNERS

In the Introduction it was stated that the 1931 Census of Unemployment covered the wage-earning class in Canada*, and that this class, 2,570,097 persons in all, accounted for 24.80 p.c. of the total population and 65.44 p.c. of the population in gainful occupations. It was further pointed out that the proportionate importance of wage-earners, as compared with employers, own accounts, or unpaid family workers, in the total of gainfully employed persons varied considerably as between occupations and, hence, as between those regions in which the occupational character of the people showed marked differences. An unemployment study that is concerned with unemployment among wage-earners as a population problem will, therefore, be more comprehensive in its treatment of that problem for those provinces in which a large proportion of the total gainfully occupied population are wage-earners than where their importance is less. Hence any analysis of unemployment, regional, occupational or otherwise, should first be preceded by a survey of the relation that exists between the total population of the country and its working force, the latter implying not only the wage-earning class but also the aggregate of persons following gainful occupations. This is necessary in order to view the problem in its proper perspective.

Provincial Distribution.—In Statement XIX the total population, the population 10 years of age and over, and the population in gainful occupations are shown by sex for Canada and the provinces, Census of 1931. A percentage distribution by provinces of the population and of the number gainfully occupied is given in Statement XX.

*Throughout this study it will be understood that by Canada is meant the area comprising the provinces and not including Yukon and Northwest Territories.

XIX.—TOTAL POPULATION, POPULATION 10 YEARS OF AGE AND OVER AND GAINFULLY OCCUPIED POPULATION, BY SEX, CANADA AND PROVINCES, 1931

Province	Total Population			Population 10 Years and over			Gainfully Occupied		
	Both Sexes	Male	Female	Both Sexes	Male	Female	Both Sexes	Male	Female
CANADA.....	10,362,833	5,366,502	4,996,331	8,159,069	4,252,537	3,906,522	3,927,230	3,261,371	665,859
Prince Edward Island.....	88,038	45,392	42,646	69,333	35,907	33,426	32,166	27,818	4,348
Nova Scotia.....	512,846	263,104	249,742	402,401	207,098	195,303	181,087	153,151	27,936
New Brunswick.....	408,219	208,620	199,599	310,316	159,102	151,214	140,005	117,938	22,072
Maritime Provinces.....	1,009,103	517,116	491,987	788,050	408,107	379,943	353,258	296,908	56,350
Quebec.....	2,874,255	1,447,124	1,427,131	2,167,517	1,091,418	1,076,099	1,025,709	823,287	202,422
Ontario.....	3,431,083	1,748,844	1,682,239	2,791,072	1,423,989	1,367,083	1,346,214	1,096,726	249,488
Manitoba.....	700,139	368,005	332,074	557,806	286,095	261,711	270,672	225,764	44,908
Saskatchewan.....	921,785	490,835	431,950	705,350	390,108	315,242	335,911	301,435	37,476
Alberta.....	731,606	400,199	331,406	572,129	319,840	252,289	286,203	252,742	33,461
Prairie Provinces.....	2,363,529	1,288,139	1,075,390	1,855,285	1,006,040	849,245	895,790	779,041	115,845
British Columbia.....	694,263	385,219	309,044	583,135	328,983	254,152	306,263	262,515	43,748

XX.—PERCENTAGE DISTRIBUTION BY PROVINCES OF TOTAL POPULATION, POPULATION 10 YEARS OF AGE AND OVER AND GAINFULLY OCCUPIED POPULATION, BY SEX, CANADA AND PROVINCES, 1931

Province	Total Population			Population 10 Years and over			Gainfully Occupied		
	Both Sexes	Male	Female	Both Sexes	Male	Female	Both Sexes	Male	Female
	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.
CANADA.....	100-00	100-00	100-00	100-00	100-00	100-00	100-00	100-00	100-00
Prince Edward Island.....	0.85	0.85	0.85	0.85	0.84	0.86	0.82	0.85	0.85
Nova Scotia.....	4.96	4.90	5.00	4.98	4.87	5.00	4.61	4.70	4.20
New Brunswick.....	3.94	3.89	3.99	3.80	3.74	3.87	3.56	3.62	3.31
Maritime Provinces.....	9.74	9.64	9.85	9.59	9.46	9.73	9.00	9.16	8.18
Quebec.....	27.74	26.07	28.56	26.57	25.67	27.55	26.12	25.24	30.40
Ontario.....	33.12	32.59	33.68	34.21	33.49	34.90	34.28	33.63	37.47
Manitoba.....	6.76	6.86	6.65	6.84	6.96	6.70	6.89	6.92	6.74
Saskatchewan.....	8.90	9.32	8.44	8.64	9.17	8.07	8.63	9.24	5.63
Alberta.....	7.06	7.46	6.63	7.01	7.52	6.46	7.29	7.75	5.03
Prairie Provinces.....	27.71	29.38	27.78	27.49	29.09	27.85	27.91	28.91	17.40
British Columbia.....	6.70	7.18	6.19	7.15	7.74	6.51	7.80	8.05	6.57

An inspection of these tables discloses the information that the 3,431,683 persons living in the province of Ontario in 1931 represented one-third of the total population in all provinces combined, and that the 2,874,255 persons residing in Quebec accounted for 27.74 p.e. of the Dominion total. In other words, 60.86 p.e. or three-fifths of the Canadian population at the 1931 Census were resident in these two provinces. A total of 2,353,529 persons or between one-fifth and one-quarter of Canada's population was found in the Prairie Provinces. If to the population of the Prairie Provinces is added the 694,263 persons living in British Columbia, the aggregate population of over three millions for these western provinces is somewhat larger than the population of Quebec though 383,891 less than the population of Ontario. Just over one million persons were residents of the Maritime Provinces, or about one-tenth of the population of the Dominion. As between sexes the males show a slightly greater proportion of their number living in the western provinces than was the case among the females.

The distribution by provinces of the population 10 years of age and over is also represented in the preceding statements in order to provide a truer basis of comparison with the provincial distribution of the gainfully occupied, for the latter, according to census definition, are all persons 10 years of age and over. It is evident from a glance at Statement XX that the distribution of the gainfully occupied by provinces corresponds more closely with the distribution of the population 10 years of age and over than with the distribution of the total population.

The first important fact to be derived from these figures is that the working population in 1931 was distributed by provinces in approximately the same proportions as the total population; or as the population at working ages, i.e., 10 years of age and over. For example, the 1,346,214 persons in gainful occupations in Ontario accounted for just over one-third of the total gainfully occupied in Canada; the 1,025,709 in Quebec just over one-quarter; the 895,786 in the Prairie Provinces a little more than one-fifth; the 353,258 in the Maritimes slightly less than one-tenth, and the 306,263 in British Columbia about one-thirteenth of the total in gainful occupations in the Dominion. The second fact is that, though males and females were about equally represented in the total population and in the population 10 years of age and over, in the gainfully occupied population the proportion of males to females was almost five to one.

From what has been said regarding the close similarity between the distribution of the population by provinces and the provincial distribution of the gainfully occupied it will be apparent that the proportion of the population in gainful occupations does not vary materially from province to province. Statement XXI which gives the percentage of the total population, and of the population 10 years of age and over, in gainful occupations by provinces illustrates this fact.

XXI.—PERCENTAGES OF TOTAL POPULATION AND OF POPULATION 10 YEARS OF AGE AND OVER IN GAINFUL OCCUPATIONS, BY SEX, CANADA AND PROVINCES, 1931 AND 1921

Province	P.C. Gainfully Occupied of											
	Total Population						Population 10 Years and over					
	1931			1921			1931			1921		
	Both Sexes	Male	Female	Both Sexes	Male	Female	Both Sexes	Male	Female	Both Sexes	Male	Female
CANADA.....	37.90	60.77	13.33	36.16	59.33	11.52	48.13	76.69	17.04	47.56	77.52	15.27
Prince Edward Island...	36.54	61.28	10.20	35.10	60.27	9.27	46.39	77.47	13.01	44.94	77.22	11.86
Nova Scotia.....	35.31	58.21	11.19	35.42	58.83	11.18	45.00	73.95	14.30	45.98	76.28	14.53
New Brunswick.....	34.30	56.53	11.06	34.24	57.23	10.43	45.12	74.12	14.60	45.48	75.82	13.88
Maritime Provinces.....	35.01	57.80	11.05	34.94	58.54	10.78	45.17	74.55	14.51	45.69	76.19	14.04
Quebec.....	35.69	56.89	14.18	33.27	54.78	11.78	47.32	75.43	18.81	45.22	74.44	16.01
Ontario.....	39.23	62.71	14.83	38.13	62.31	13.44	48.23	77.02	18.26	48.12	78.70	16.95
Manitoba.....	38.66	61.34	13.52	38.51	57.70	10.94	48.02	76.25	17.16	47.92	76.87	14.98
Saskatchewan.....	36.77	60.29	8.88	35.24	58.62	7.23	48.05	77.27	11.89	49.63	80.06	10.56
Alberta.....	39.12	63.15	10.10	36.75	60.18	8.00	50.02	79.02	13.26	49.82	79.34	11.24
Prairie Provinces.....	38.08	61.60	10.67	35.78	58.78	8.66	48.81	77.55	15.97	49.15	78.86	12.53
British Columbia.....	44.11	68.15	14.16	41.89	66.19	11.04	52.52	79.80	17.21	52.25	80.67	14.21

Approximately three-fifths of the total male population in Canada in 1931 were found in gainful occupations and about one-eighth of the females. (According to census practice the largest single class of adult females, viz., "homemakers," were included among the gainfully occupied.) As between provinces the percentage of the males in gainful occupations varied between 56 and

63 p.c. of the total population, with the exception of British Columbia where the percentage was somewhat higher—68.15 p.c. Differences between provinces in this regard reflect in the main the differences that exist in the age composition of the population in the various provinces. In British Columbia, for example, a much greater proportion of its male population was of working age in 1931 than was the case generally. Likewise for females, such variations as existed between provinces in the percentage gainfully occupied were largely attributable to the influence of the age factor, though differences in the types of employment available in the various provinces were also responsible. The higher percentage of women in gainful occupations in the provinces of Ontario and Quebec than elsewhere was no doubt due to the greater opportunities for female employment provided by the factories of those provinces.

Turning to the section of the statement showing the percentage of the population 10 years of age and over in gainful occupations, it will be noted that over three-quarters of the males at working ages were gainfully occupied in 1931 and about one-sixth of the females were following gainful occupations. Reasons for variations by provinces in the percentage gainfully occupied have been discussed above. Summarizing the provincial figures it might be stated that a smaller percentage of the males in the Maritime Provinces and Quebec was gainfully occupied than in Ontario and the Western Provinces, while among females the Maritimes, Saskatchewan and Alberta showed a smaller proportion of their number in gainful occupations than Quebec, Ontario, Manitoba, and British Columbia. The importance of agriculture—an industry in which females are not employed to any large extent—in the economic life of the provinces of Saskatchewan and Alberta accounted for the lower percentage of females in gainful employment in those provinces than elsewhere. Though primary industries which, as will be seen, afford less scope for female employment than manufacturing, trade or service, were also important in Manitoba and British Columbia, it so happened that these latter provinces provided more employment for women in trade and manufacturing than did Saskatchewan or Alberta.

Comparative Rates of Growth in the Decade 1921-1931.—Comparing the 1921 and 1931 percentages in Statement XXI, it will be noted that the percentage of the total population in gainful occupations, both male and female, increased between 1921 and 1931 in all provinces, with the exception of the Maritimes. There the proportion of the male population in gainful occupations declined over the decennial period while the females showed little change. The tendency for the proportion of the total population in gainful occupations to increase was due to the fact that the proportion of the total population at working ages had likewise increased between 1921 and 1931. The population 10 years and over was 76.02 p.c. of the total population of Canada in 1921 and 78.73 p.c. in 1931. Conversely, the proportion of children who were not of working age was greater in 1921 than in 1931. Hence a comparison for these two census years of the proportion of the population *10 years of age and over* in gainful employment will provide more definite conclusions. On the latter basis, it is found that the percentage of males (10 years of age and over) in gainful occupations in 1931 was less than in 1921 in all provinces except Quebec and Prince Edward Island. On the other hand, a higher percentage of the females 10 years of age and over was gainfully occupied in 1931 than in the earlier census year, and this was true in every province, with the exception of Nova Scotia where there was scarcely any change.

The changes which have taken place between 1921 and 1931 in the relationship between the total population, the population 10 years of age and over, and the population in gainful occupations, as described in the preceding paragraph, are deserving of further attention. In this connection a comparison of the rate of growth of the population at all ages, the population under and over 10 years of age, and the working population is pertinent.

In the first place, the increase in the total male population over this decade might be compared with the increase in gainfully occupied males. It is discovered that while the former showed an 18.66 p.c. increase from 1921 to 1931, the latter increased by 21.56 p.c. The reason for the slower rate of growth of the total male than of the gainfully occupied male population has already been indicated in the reference made to the decline since 1921 in the relative importance of the population under working age to the population as a whole. Actually males under 10 years of age increased by only 4.96 p.c. between 1921 and 1931 whereas those over that age recorded a growth of 22.86 p.c.—slightly higher in fact than the percentage increase

(21.56 p.c.) shown by the gainfully occupied male population. It might be explained that the slower rate of increase among gainfully occupied males than among all males 10 years of age and over was accounted for by the decrease in the proportion of males 10-17 years of age, in gainful occupations between 1921 and 1931. In the former year 24.02 p.c. of the males between these years were gainfully occupied while in 1931 the percentage was rather lower, at 18.66 p.c.

Among females the rates of growth recorded by the total population and the population under and over 10 years of age corresponded closely with the rates shown for males in these age categories. While the total female population increased by 17.47 p.c. between 1921 and 1931, females under 10 years of age increased by only 4.45 p.c. and those 10 years and over showed a percentage growth of 21.70 p.c. As compared with these rates of growth the gainfully occupied female population registered a 35.85 p.c. increase over the decade. This was a considerably faster rate of increase than for gainfully occupied males—the rate for the latter being only 21.56 p.c.

As was true of the males, the proportion of females 10-17 years of age in gainful occupations fell over the ten-year period. Only 6.20 p.c. of the females between these ages reported gainful occupations in 1931 as compared with 8.25 p.c. in 1921. However, between the ages of 18 and 34, the period in life when women are most fully represented in gainful occupations, 31.24 p.c. of the females were gainfully occupied in 1931 as compared with only 25.60 p.c. in 1921.

The much more rapid growth in gainfully occupied female population than in the male is a phenomenon of more than passing interest to the student of the problem of unemployment in Canada. Whether this condition has involved some displacement of males by females in certain occupations, and thus accentuated male unemployment in these occupations, or whether its influence upon the character of the unemployment existing in 1931 has been more indirect is a question which will receive some attention in the chapters that follow.

Bearing in mind what has been said regarding the more rapid rate of increase of gainfully occupied females than of males between 1921 and 1931 and remembering that since 1901 a constantly increasing proportion of the females at working ages, i.e., 10 years and over, has been entering gainful employment while the proportion of males at these ages in gainful occupations has declined, the following statement from a recent International Labour Office Study* on the combined effect of population changes, technical progress, and economic development on unemployment is interesting. "Experience shows," the writer observes, "that over a period of several decades the occupied population in any country maintains a more less constant ratio to the number of persons of working age. After the War the idea was current for some time that this ratio was no longer constant, having been upset by the recent rapid increase in the number of women in employment. But careful research failed to confirm this view." In Canada the ratio for the two sexes combined has remained fairly steady as a result of a decline in the proportion of males at working ages in gainful occupations being counterbalanced by an increase in the proportion of females at these ages entering into gainful employment.

Before leaving this subject of the comparative rate of growth of the total population, the population 10 years of age and over, and the population in gainful occupations it may be helpful to present in tabular form what has already been said above in order to gather together in concise fashion the materials upon which that analysis has been based.

*Woytinsky, Vladimir: *Three Sources of Unemployment*. International Labour Office Studies and Reports—Series C, No. 20—1935

XXII.—TOTAL POPULATION, POPULATION UNDER AND OVER 10 YEARS OF AGE AND GAINFULLY OCCUPIED AND WAGE-EARNING POPULATIONS, WITH THE PERCENTAGE INCREASE IN THE DECADE, BY SEX, CANADA, 1931-1921

Population Class	Males			Females		
	1931	1921	P.C. Increase 1921-1931	1931	1921	P.C. Increase 1921-1931
Total population.....	5,366,502	4,522,512	18.66	4,996,331	4,253,341	17.47
Under 10 years of age.....	1,113,965	1,061,274	4.96	1,089,809	1,043,343	4.45
10 years of age and over.....	4,252,537	3,461,238	22.86	3,906,522	3,209,998	21.70
Gainfully occupied.....	3,261,371	2,683,019	21.56	665,859	490,150	35.85
Wage-earners.....	2,022,260	1,545,994	30.81	547,837	426,195	28.54

To anyone interested in the employment-unemployment problem one other fact of significance besides that of the differential rate of increase as between gainfully occupied males and gainfully occupied females may be derived from this statement. This has to do with the slow rate of growth of the child population under 10 years of age. For both males and females there was an increase of less than 5 p.c. from 1921 to 1931. Incidentally, children under 10 years of age increased by 26 p.c. between 1911 and 1921. The decline in the rate of growth of the child population under this age (many of these have now reached an employable age) has a special bearing upon the problem of juvenile unemployment. It would appear that the actual number of children coming of employable age at this time is showing a tendency to fall off.

As touching upon the subjects of juvenile employment and unemployment the phenomenon, to which reference has already been made, of the declining proportion of young people 10-17 years of age in gainful occupations ought to be recalled at this point. This condition was apparent in the case of both males and females. Evidently it is consistent with the general tendency towards raising the school-leaving age. From the point of view of employment the number of young persons between these ages seeking jobs is thereby greatly reduced.

Before concluding this analysis of the growth of the population in relation to the increase in the gainfully occupied, a brief survey of the situation from the regional standpoint is necessary. In Statement XXIII the percentage increase in the total population and in the gainfully occupied population from 1921 to 1931 is shown by provinces.

XXIII.—PERCENTAGE INCREASE IN DECADE IN TOTAL AND GAINFULLY OCCUPIED POPULATIONS, BY SEX, CANADA AND PROVINCES, 1931-1921

Province	P.C. Increase 1921-1931 in					
	Total Population			Gainfully Occupied		
	Both Sexes	Male	Female	Both Sexes	Male	Female
CANADA.....	18.08	18.06	17.47	23.76	21.56	35.85
Prince Edward Island.....	— 0.65	1.13	— 2.47	3.41	2.83	7.25
Nova Scotia.....	— 2.10	— 1.26	— 2.96	— 2.31	— 2.31	— 2.63
New Brunswick.....	5.24	5.71	4.78	5.42	4.42	11.12
Maritime Provinces.....	0.88	1.65	0.08	1.08	0.78	5.16
Quebec.....	21.76	22.67	20.85	30.57	27.36	45.47
Ontario.....	16.98	18.01	15.92	20.36	18.77	27.87
Manitoba.....	14.75	14.82	14.09	24.94	22.06	41.75
Saskatchewan.....	21.69	20.84	22.70	26.94	24.80	50.75
Alberta.....	24.33	23.44	25.42	32.35	29.54	58.27
Prairie Provinces.....	20.58	19.81	20.61	27.99	25.56	49.15
British Columbia.....	32.35	31.29	33.69	39.38	35.17	71.47

It will be noted that while the total population and the population in gainful occupations remained almost stationary in the Maritime Provinces, the losses in Nova Scotia being counterbalanced by the gains in New Brunswick, the remaining provinces showed increases, though of widely varying extent. In Quebec the growth in both the total population and the gainfully occupied was more rapid than for Canada as a whole. In Ontario the rate of growth fell short of the Dominion rate. In Manitoba the total population increased at a slower rate than in Canada while the increase in the gainfully occupied was more rapid than the average rate of increase for all provinces combined. Saskatchewan, Alberta and British Columbia were well above the average in the rate of increase of the population as a whole and in the rate of increase of the proportion in gainful occupations. British Columbia recorded a remarkable growth over this decade. The total female population and the gainfully occupied increased at rates almost double those noted for all provinces combined. Perhaps it is of significance in this connection to mention that British Columbia showed the highest percentage of unemployment in Canada at the Census of 1931.

With these remarks on the past and present relation between the total population and the number in gainful occupations in Canada and its provinces, consideration may now be given to the place of the wage-earners in the population generally as well as in the total gainfully occupied population.

Proportion of Wage-Earners in Each Class.—Statement XXIV gives a numerical and percentage distribution of wage-earners by provinces at the 1931 Census. For comparative purposes a percentage distribution of the gainfully occupied is added. (See also Statements XIX and XX.)

XXIV.—NUMERICAL AND PERCENTAGE DISTRIBUTION OF WAGE-EARNING POPULATION AND PERCENTAGE DISTRIBUTION OF GAINFULLY OCCUPIED POPULATION, BY SEX, CANADA AND PROVINCES, 1931

Province	Wage-Earners						P.C. of Gainfully Occupied		
	No.			P.C.					
	Both Sexes	Male	Female	Both Sexes	Male	Female	Both Sexes	Male	Female
CANADA.....	2,570,097	2,022,260	547,837	100.00	100.00	100.00	100.00	100.00	100.00
Prince Edward Island.....	12,344	9,159	3,185	0.48	0.45	0.58	0.82	0.85	0.65
Nova Scotia.....	117,781	95,244	22,537	4.58	4.71	4.11	4.81	4.70	4.20
New Brunswick.....	84,232	66,310	17,922	3.28	3.28	3.27	3.56	3.62	3.31
Maritime Provinces.....	314,557	170,713	143,844	8.34	8.44	7.97	9.09	9.16	8.16
Quebec.....	696,339	535,203	161,136	27.09	26.47	29.41	26.12	25.24	30.40
Ontario.....	965,607	752,851	212,756	37.57	37.23	38.84	34.28	33.63	37.47
Manitoba.....	170,739	132,883	37,856	6.64	6.57	6.91	6.89	6.92	6.74
Saskatchewan.....	145,568	116,157	29,411	5.66	5.74	5.37	5.63	5.24	5.63
Alberta.....	142,421	116,005	26,416	5.54	5.74	4.82	7.29	7.75	5.08
Prairie Provinces.....	438,728	365,045	73,683	17.85	18.06	17.10	22.81	22.91	17.40
British Columbia.....	235,066	188,448	46,618	9.15	9.81	6.68	7.80	8.05	6.57

It will be observed that the distribution of wage-earners by provinces shows one or two notable differences from the distribution of the gainfully occupied and, therefore, in view of what has been noted in the foregoing, from the distribution of the population. The percentage of total wage-earners in Canada found in the province of Ontario was somewhat higher than the percentage of the total gainfully occupied in this province, 37.57 p.e. of total wage-earners as compared with 34.28 p.e. of the total gainfully occupied being located here. On the other hand, only 17.85 p.e. of the wage-earners were found in the Prairie Provinces as compared with 22.81 p.e. of the gainfully occupied. A slightly greater proportion of total wage-earners than of total gainfully occupied was located in British Columbia and in Quebec, while a slightly smaller proportion of the former than of the latter was found in the Maritime Provinces. It is, of course, in urban areas that wage-earners predominate, and in respect to urbanization Ontario rather exceeds the average for all provinces combined while the Prairie Provinces, particularly Saskatchewan and Alberta, are considerably below the average.

It is of assistance in visualizing the scope of the employment problem to remember that in 1931 about 960,000 wage-earners were living in Ontario, nearly 700,000 in Quebec, about 460,000 in the Prairie Provinces, 235,000 in British Columbia and about 215,000 in the Maritime Provinces.

As in the case of the gainfully occupied, males were considerably in excess of females, there being about four male wage-earners in Canada to every female wage-earner, the ratio varying between provinces according as the ratio of total males to total females at working ages varied and according as the types of industry differed from province to province.

Before describing the relationship that existed in 1931 between the gainfully occupied population and the elements of which it was composed, i.e., the employers, own accounts, wage-earners and no pays, it might be of some interest to show the percentage of wage-earners in the total population and in the population 10 years of age and over, of each province. Such a table should be compared with Statement XXI where the percentage of the population in gainful occupations was shown by provinces for 1921 and 1931.

XXV.—PERCENTAGES OF TOTAL POPULATION AND OF POPULATION 10 YEARS OF AGE AND OVER IN WAGE-EARNING OCCUPATIONS, BY SEX, CANADA AND PROVINCES, 1931 AND 1921

Province	P.C. Wage-Earners in											
	Total Population						Population 10 Years and over					
	1931			1921			1931			1921		
	Both Sexes	Male	Female	Both Sexes	Male	Female	Both Sexes	Male	Female	Both Sexes	Male	Female
CANADA.....	24.80	37.68	10.96	22.47	34.18	10.02	31.50	47.55	14.02	29.56	44.66	13.28
Prince Edward Island....	14.02	20.18	7.47	12.84	18.10	7.43	17.80	25.51	9.53	16.43	23.19	9.50
Nova Scotia.....	22.97	36.20	9.02	22.54	35.02	9.62	29.27	45.99	11.54	29.26	45.40	12.51
New Brunswick.....	20.63	31.79	8.98	20.70	32.03	8.97	27.14	41.68	11.85	27.50	42.44	11.95
Maritime Provinces.....	21.84	33.01	8.87	20.97	32.57	9.18	27.41	42.45	11.49	27.45	42.27	12.02
Quebec.....	24.25	36.98	11.29	21.38	32.79	9.97	32.13	49.04	14.97	29.05	44.56	13.56
Ontario.....	28.14	43.05	12.64	25.88	39.65	11.93	34.50	52.87	15.56	32.06	49.35	15.04
Manitoba.....	24.39	36.10	11.40	21.00	31.12	9.79	30.61	44.85	14.46	28.33	41.46	13.40
Saskatchewan.....	15.79	23.23	6.97	13.73	19.95	6.20	20.64	29.78	9.33	19.33	27.34	9.05
Alberta.....	19.47	28.99	7.97	17.46	26.07	6.89	24.89	36.27	10.47	23.67	34.37	9.68
Prairie Provinces.....	19.49	28.78	8.65	17.18	25.88	7.56	24.99	36.29	11.50	25.51	33.84	10.68
British Columbia.....	33.86	51.52	11.85	31.17	48.12	9.65	40.31	60.32	14.41	38.88	58.57	12.43

The percentage that wage-earners form of the total population or of the population 10 years and over is, of course, much lower than the corresponding percentage for the gainfully occupied (see Statement XXI). The difference is greater for males than for females and for provinces that are largely agricultural in which wage-earners constitute a minor part of the total gainfully occupied population, than elsewhere. In 1931 only 37.68 p.c. of the total male population in Canada and 47.55 p.c. of the male population 10 years of age and over were wage-earners, as compared with 60.77 p.c. and 76.69 p.c., respectively, that were gainfully occupied. Of the total female population in Canada in 1931, 10.96 p.c. were wage-earners as compared with 13.33 p.c. gainfully occupied, and of the female population 10 years of age and over 14.02 p.c. were wage-earners as compared with 17.04 p.c. in all gainful occupations. In the provinces of Saskatchewan, Alberta and Prince Edward Island where agriculture occupies a prominent place in the industrial life of the province only 29.78 p.c., 36.27 p.c. and 25.51 p.c., respectively of the male population at working ages were found in wage-earning occupations in 1931 as compared with 49.04 p.c. for Quebec, 52.87 p.c. for Ontario and 60.32 p.c. for British Columbia. As was shown in Statement XXI, none of these provinces recorded any appreciable variation in the percentage of the males at working ages in gainful occupations from the percentage of 76.69 for Canada.

It will be clear from this comparison that the information for wage-earners, as found in Statement XXV, should be studied in conjunction with data in Statement XXI, for the proportion of the population in gainful occupations—and this is especially true of the males—was by no means fully represented by the percentage in wage-earning employments. Used in this fashion the one (Statement XXI) may be considered as answering the question: "Upon what proportion of its number does the population of this country depend for its support?" The other (Statement XXV) will be turned to for information as to the proportion of the population contributing towards this support in receipt of wage or salary.

It will be noticed that both male and female wage-earners constituted a larger proportion of the population at all ages and the population 10 years and over in 1931 than in 1921. This change in their relation to the population was not wholly consistent with the changes, previously described, in the relationship of the gainfully occupied as a whole to the population between 1921 and 1931. It was pointed out that gainfully occupied males formed a smaller part of the male population 10 years and over in 1931 than in 1921, and this appeared to be due to the falling off in the proportion of children 10-17 years of age in gainful occupations over this decennial period. From these observations it is evident that males in wage-earning occupations increased at a faster rate than total males in gainful occupations between 1921 and 1931.

Turning back to Statement XXII it is discovered that male wage-earners increased by 30.81 p.c. between 1921 and 1931 as compared with a 21.56 p.c. increase for all males in gainful occupations. This increase on the part of male wage-earners was not only much more rapid than for the total male population in gainful occupations but also for the total male population at working ages. The latter increased by 22.86 p.c. over the decade under consideration. Female wage-earners it will be noted increased by 28.54 p.c., or at a slightly slower rate than the males. Females

at working ages increased by 21.70 p.c. and gainfully occupied females by 35.85 p.c. Actually the true increase in female wage-earners between 1921 and 1931 can not be derived from the figures that exist owing to certain differences in the method of classification of wage-earning as distinct from no pay (unpaid family worker) females in a number of occupations at the two census years. After allowance was made for these differences in classification procedure it was estimated that female wage-earners actually increased by 34.03 p.c. between 1921 and 1931 as compared with a 30.81 p.c. increase for the males.

While comparing the increase of male wage-earners with the increase of female wage-earners between 1921 and 1931, attention should be given to one special feature, *viz.*, the increase recorded by young persons as compared with adults. Males 20 years and over increased by 35.02 p.c. and females over that age by 36.04 p.c. compared with the increases, already noted, of 30.81 p.c. for males and 28.54 p.c. for females of all ages. Under 20 years of age, however, male wage-earners actually declined 0.34 p.c. over the ten years between 1921 and 1931, while females under that age registered a gain of only 8.41 p.c. As affecting the age composition of the wage-earners and as bearing upon the problem of unemployment among young people these facts can not receive too much emphasis. More attention will be given to the age factor in later chapters.

The percentage increase in wage-earners from 1921 to 1931 is given by provinces in Statement XXVI.

XXVI.—PERCENTAGE INCREASE IN DECADE IN WAGE-EARNING POPULATION, BY SEX, CANADA AND PROVINCES, 1931-1921

Province	P.C. Increase in Wage-Earners 1921-1931		
	Both Sexes	Male	Female
CANADA.....	30.32	30.81	28.54
Prince Edward Island.....	8.53	12.73	-1.97
Nova Scotia.....	-0.26	2.07	-9.01
New Brunswick.....	4.58	4.90	4.33
Maritime Provinces.....	8.19	5.68	-5.26
Quebec.....	37.96	38.31	36.80
Ontario.....	27.18	28.45	22.89
Manitoba.....	33.29	33.21	33.57
Saskatchewan.....	39.98	40.49	38.00
Alberta.....	38.64	37.24	45.10
Prairie Provinces.....	37.01	36.74	38.06
British Columbia.....	43.77	40.55	64.15

This statement should be compared with Statement XXIII where the percentage increase in the total population and the gainfully occupied population over this period is shown by provinces. Differences by provinces in the rate of increase of wage-earners reflected fairly closely differences in population growth. Similarly there was a generally uniform relation as between provinces in the rate of increase of the total in gainful occupations and of the number of wage-earners. The correspondence is broken in one or two instances. For example, Saskatchewan recorded a smaller gain in gainfully occupied males between 1921 and 1931 than Alberta, a 24.50 p.c. increase for the former as compared with a 29.54 p.c. increase for the latter, but a larger increase in male wage-earners, the percentage for Saskatchewan being 40.49 as compared with 37.24 for Alberta. Incidentally, it should be noted that urbanization was going on at a faster rate over this decade in Saskatchewan than in Alberta. Each province, however, did show a more rapid increase in male wage-earners than in the total of gainfully occupied males and a slower rate of increase for females in wage-earning occupations than in all gainful occupations. As has been explained, the slower rate of increase for female wage-earners than for the total of gainfully occupied females appears to be due almost wholly to differences of classification procedure at the two censuses for which comparison is being made.

Rural-Urban and Sex Aspects.—Before concluding this analysis of the relation between the total population, the population in gainful occupations and the wage-earners, a comparison of their relative growth in urban areas may be appropriate in view of the examination in a later chapter of unemployment in urban centres. It is, of course, in urban communities that wage-earners were mainly found, over 68.35 p.c. of their number living in urban communities of 1,000 population and over in 1931.

Unfortunately no figures exist for 1921 showing the total gainfully occupied and the number of wage-earners in urban areas of 1,000 population and over. Hence no comparison of population growth with the growth in total gainfully occupied or with the growth of the number in wage-earning occupations is possible for these urban communities. A comparison of this kind is only possible for cities of 30,000 population and over at the 1921 Census.

Comparing, first, the growth in the population at working ages, i.e., 10 years of age and over, with the increase in the number in gainful occupations in these cities as a group it is discovered that all males 10 years of age and over increased by 38.41 p.c. over the decade under review as compared with a 34.97 p.c. increase in gainfully occupied males. For females the percentage increases were 34.51 and 40.52 respectively. It will be remembered that for Canada as a whole the growth of the total population at working ages and the gainfully occupied was not so pronounced, males 10 years and over increasing by 22.86 p.c. between 1921 and 1931 and gainfully occupied males by 21.56 p.c., while total females 10 years of age and over increased by 21.70 p.c. and gainfully occupied females by 35.85 p.c.

An examination of these figures reveals that in both the urban areas of 30,000 and over and in the Dominion as a whole, gainfully occupied males increased more slowly than all males at working ages, i.e., 10 years of age and over. It would appear, however, from these figures that gainfully occupied males showed a slower growth relative to the growth in total males 10 years of age and over, in these cities than in Canada as a whole. On the other hand, gainfully occupied females increased more rapidly than total females 10 years of age and over, during this decennial period, both in Canada and in cities of 30,000 and over. As was true of the males, gainfully occupied females did not show as large an increase relative to the increase in total females 10 years of age and over, in these urban centres as in Canada generally.

In the cities the decrease in the proportion of young persons 10-17 years of age in gainful occupations between 1921 and 1931 was greater than in Canada as a whole, and this factor probably accounted for the slower rate of increase in the gainfully occupied relative to the growth in the total population at working ages in the cities than in Canada. In the former the percentage of males in gainful occupations between the ages of 10 and 17 fell from 19.63 to 12.49, or 36.37 between 1921 and 1931, while for females the percentage declined from 15.15 to 9.41, or 37.89, over this period. For Canada the percentage decrease for males between these ages was 22.31 and for females 24.85, a much smaller decline in both cases.

Male wage-earners showed an increase of 41.16 p.c. from 1921 to 1931 in the cities of 30,000 population and over as compared with a 30.81 p.c. increase in Canada, while for females the percentages were 38.31 and 28.54 respectively. Contrary to what was discovered for gainfully occupied males as a whole, those in wage-earning occupations increased more rapidly than total males at working ages in both the cities and the country generally. Female wage-earners, like total females in gainful occupations, showed a faster rate of increase than total females at working ages in the cities of 30,000 and over, and in Canada as a whole. As would be expected male wage-earners in Canada showed a faster rate of increase relative to the growth in the total male population at working ages than male wage-earners in the cities to the total male population at working ages in these cities. The same was true but to a lesser degree for females. The movement in population from rural to urban centres over the decade with consequent changes in the ratio of wage-earners to total gainfully occupied is at the basis of the trends thus disclosed. These relationships are represented in summary form in the following statement:—

XXVII.—PERCENTAGE INCREASE IN DECADE IN POPULATION 10 YEARS OF AGE AND OVER, GAINFULLY OCCUPIED AND WAGE-EARNING POPULATIONS, BY SEX: FOR TOTAL OF CITIES OF 30,000 POPULATION AND OVER COMPARED WITH CANADA AS A WHOLE, 1931-1921

Population Class	Males			Females		
	1931	1921	P.C. Increase 1921-1931	1931	1921	P.C. Increase 1921-1931
CITIES OF 30,000 AND OVER ¹						
10 years of age and over.....	1,148,613	829,860	39.41	1,182,002	878,730	34.61
Gainfully occupied.....	887,996	657,028	34.97	308,757	216,171	40.52
Wage-earners.....	753,390	533,731	41.16	256,257	185,299	38.31
CANADA						
10 years of age and over.....	4,252,537	3,461,238	22.86	3,906,522	3,209,098	21.70
Gainfully occupied.....	3,261,371	2,683,019	21.56	665,850	490,150	35.85
Wage-earners.....	2,022,200	1,545,894	30.81	547,837	426,195	28.54

¹ Based on cities of 30,000 population and over in 1921.

What has just been observed in respect to the relative rate of increase of the total gainfully occupied and the wage-earners is brought out in another way in Statement XXVIII, where the percentage of all gainfully occupied persons in wage-earning occupations is given by provinces for 1921 and 1931.

XXVIII.—PERCENTAGES OF GAINFULLY OCCUPIED POPULATION IN WAGE-EARNING OCCUPATIONS, BY SEX, CANADA AND PROVINCES, 1931 AND 1921

Province	P.C. Wage-Earners of Gainfully Occupied					
	1931			1921		
	Both Sexes	Male	Female	Both Sexes	Male	Female
CANADA.....	65.44	62.01	82.28	62.15	57.02	86.95
Prince Edward Island.....	38.38	32.92	73.25	36.57	30.03	80.14
Nova Scotia.....	65.04	62.19	80.67	63.64	59.52	86.07
New Brunswick.....	60.16	56.23	81.20	60.47	55.97	86.07
Maritime Provinces.....	60.08	57.11	80.89	60.09	55.48	85.61
Quebec.....	67.89	65.01	79.50	64.25	59.86	84.05
Ontario.....	71.73	68.65	85.28	67.88	63.47	88.73
Manitoba.....	63.08	58.86	84.30	59.13	53.93	89.45
Saskatchewan.....	42.95	38.53	78.48	38.95	34.15	85.74
Alberta.....	49.76	45.90	78.95	47.51	43.32	86.11
Prairie Provinces.....	61.81	46.80	80.87	47.84	46.91	87.55
British Columbia.....	76.75	75.59	83.70	74.41	72.70	87.44

From this statement it will be seen that male wage-earners had become a larger proportion of all gainfully occupied males in 1931 than in 1921 and that this was true in every province. For females the opposite appears to have occurred. Actually there was probably very little difference between the two years in the percentage of the gainfully occupied females in wage-earning occupations. Had the 1931 definition of "no pays" applied in 1921 it is likely the percentage for the earlier year would have been slightly above or below the percentage of 82.28 for 1931.

The trend toward a greater urbanization of the population of Canada from 1921 to 1931, which was characterized in the employment field by a falling off in the position of agriculture relative to other industries in the proportion of the working population engaged therein, was associated with a considerable increase in the percentage of wage-earners in the total of gainfully occupied males over this decade. It is in agriculture that the bulk of the "other-than-wage-earners" are found. Hence, its failure to keep pace with the expansion in other industries employing mainly wage-earners is the reason why the percentage of wage-earners in the total of males in gainful occupations rose from 57.62 p.c. in 1921 to 62.01 p.c. in 1931.

An examination of the statistics of gainfully occupied males in agriculture for 1921 and 1931 disclosed that there had been an 8.22 p.c. increase in their number over this ten-year period. This increase might be compared with the 21.56 p.c. increase already noted for total males in gainful occupations. When it is realized that one-third of the gainfully occupied males in Canada are employed in agriculture it will be appreciated that a slowing down in the growth of this industry, as measured by the number of persons normally engaged therein in relation to the development of other industries, is bound to make a considerable change in the composition of the working population. This is especially true from the standpoint of the relation of the wage-earning class to the total gainfully occupied population, for 73.22 p.c. of the males in "other-than-wage-earner" classes, i.e., employers, own accounts and unpaid family workers, were found in agriculture in 1931 and they constituted over 80 p.c. of all gainfully occupied males in this industry. Hence a decline in agriculture relative to other industries involved a decline in employers, own accounts and no pays relative to wage-earners. Actually this 73.22 p.c. of total "other-than-wage-earners" showed a 6.96 p.c. increase between 1921 and 1931. It might be added that the total of "other-than-wage-earner" males in Canada increased by 8.97 p.c. over this decade as compared with the 30.81 p.c. increase shown for male wage-earners over the same period.

For females, there was apparently less change, after allowing for classification differences, in the proportion of wage-earners in the gainfully occupied as a whole between 1921 and 1931 than was the case with the males. This was partly due to the fact that females were not found to anything like the same extent as males in agriculture. In the fields of employment in which females were found, those employed in an employer or own account capacity did on the whole increase at a slightly faster rate than the wage-earners. The number of females in certain occupations which were largely own account in their nature declined between 1921 and 1931 but the

loss was more than made up in the marked growth in the number of "lodging house keepers" on own account. A considerable number of these women were forced into the ranks of the gainfully occupied through economic necessity, their husbands being unemployed and showing lengthy periods of unemployment and low earnings over the year period immediately preceding the date of the census. However, the chief cause of this large increase in "lodging house keepers" was the change made in the 1931 Census in the definition of the class "lodging and boarding house keepers." Statement XXIX lists the chief occupations in which gainfully occupied females of employer or own account status were found in 1921 and 1931 and gives the increase or decrease which took place in their number over this period.

XXIX.—NUMBER OF FEMALES OF OWN ACCOUNT AND EMPLOYER STATUS IN SELECTED OCCUPATIONS AND PERCENTAGE INCREASE IN THE DECADE, CANADA, 1931-1921

Occupation	Female Employers and Own Accounts			
	1931	1921	Increase 1921-1931	
			No.	P.C.
All occupations.....	73,687	51,263	22,424	43.74
Farmers.....	18,869	16,090	2,779	17.27
Dressmakers and seamstresses.....	7,890	11,664	-3,774	-32.36
Dealers—retail stores.....	6,059	5,764	295	5.12
Nurses—graduate.....	8,330	6,366	2,464	38.71
Musicians and music teachers.....	3,159	2,944	315	11.08
Hotel and restaurant keepers.....	1,720	981	739	75.33
Lodging house keepers.....	18,707	4,810	13,897	288.92
Barbers and hairdressers.....	3,221	237	2,984	1,259.07
Washerwomen and charwomen.....	1,105	1,026	79	7.70
All others.....	4,127	1,481	2,646	178.66

It will be recalled that the estimated increase in female wage-earners between 1921 and 1931, after adjustment was made for changes in classification method, was 34.03 p.c. The percentage increase in the total of employer and own account females for the same period was 43.74. The greater increase in the latter than in the wage-earners was due, as has been already stated, to the exceptional increase in "lodging house keepers." Not including this class, the combined total of female employers and own accounts increased by only 18.36 p.c. over this decade. Incidentally, it is interesting to note that "hairdressers" increased phenomenally while "dressmakers and seamstresses" actually decreased by 32.36 p.c.

As has been explained, the wage-earners constituted a larger proportion of the total population and of the gainfully occupied in provinces where urbanization has been greatest and where, therefore, agriculture does not occupy such an important place in the industrial life of the province. Examining Statement XXVIII again it will be observed that there were substantial differences between provinces in the percentage of the gainfully occupied in wage-earning occupations. These differences are represented in Statement XXX where the percentage of gainfully occupied in wage-earning occupations in each province is shown in relation to the proportion of the population in urban and rural areas, the percentage of the population living on farms and the proportion of the total gainfully occupied in agriculture, for 1931.

XXX.—PERCENTAGES OF GAINFULLY OCCUPIED POPULATION IN WAGE-EARNING OCCUPATIONS COMPARED WITH THE DEGREE OF URBANIZATION AND THE IMPORTANCE OF AGRICULTURE IN EACH PROVINCE, CANADA, 1931

Province	P.C. of Population			P.C. of Gainfully Occupied			
	Urban	Rural	Living on Farms	In Agriculture		Wage-Earners	
				Males	Females	Males	Females
CANADA.....	53.76	46.24	31.74	33.85	3.64	62.01	82.28
Prince Edward Island.....	23.15	76.85	63.02	64.01	13.09	32.92	73.25
Nova Scotia.....	45.17	54.83	34.65	27.33	4.69	62.19	80.67
New Brunswick.....	31.59	68.41	44.15	35.40	4.48	56.23	81.20
Maritime Provinces.....	37.76	62.24	40.97	35.57	6.27	57.11	80.29
Quebec.....	63.10	36.90	27.03	27.32	2.27	65.01	79.60
Ontario.....	61.08	38.92	23.34	27.07	2.72	68.65	85.28
Manitoba.....	45.13	54.87	36.61	40.48	4.18	58.86	84.30
Saskatchewan.....	31.56	68.44	61.19	66.62	9.63	38.53	78.48
Alberta.....	35.07	64.93	61.27	56.42	9.13	45.90	78.05
Prairie Provinces.....	37.68	62.32	60.79	56.75	7.39	46.80	80.87
British Columbia.....	56.80	43.20	14.74	15.85	3.34	75.59	83.70

In Ontario where 61 p.c. of the people live in urban localities and only 23 p.c. on farms, wage-earners represented more than two-thirds (68.65 p.c.) of the gainfully occupied males in the province. In Quebec the urban population is in fact more concentrated than in Ontario with a somewhat larger percentage (27.03 p.c.) on farms, but the working population exhibited comparable features, 65 p.c. of the males being wage-earners. In the Prairie Provinces where 62 p.c. of the population were resident in rural localities and more than half were living on farms, male wage-earners represented on the average only 47 p.c. of the total number of gainfully occupied persons. In Saskatchewan and Alberta (as in Prince Edward Island) wage-earners were actually a minority of the working force. The particularly high proportion of wage-earners in British Columbia, viz., 75 p.c., is a special case influenced not only by the concentration of the urban population, but by the fact that the weight of the primary industries in the Pacific Coast province is more equally shared between agriculture, mining and lumbering. In the two latter industries, in direct contrast to agriculture, wage-earners constituted practically the total engaged in these industries. With an urban-rural distribution equal to that of the Prairie Provinces but without so large a percentage of farm population, the proportion of wage-earners to total gainfully occupied in the Maritimes came mid-way between the proportions characterizing the Prairies on the one hand and the two larger eastern provinces on the other.

As for females, it may be noted that in Saskatchewan, Alberta and Prince Edward Island, where the proportion of wage-earners in the gainfully occupied female population fell below 50 p.c., the percentage of women employed in agriculture was markedly above the average. In Quebec, where the percentage was just under 80, the prevalence of nuns in the teaching and nursing professions tended to reduce the wage-earner percentage, as nuns in these professions were usually reported as "no pays."

Industrial Status in Various Occupations.—In Statements XXVIII and XXX the percentage of the total gainfully occupied in wage-earning occupations has been shown. It was pointed out that where variations as between provinces in this percentage were marked it was due to the differences that existed in the proportionate importance of agriculture in the occupational life of the provinces. Agriculture, it was explained, accounted for the bulk of the male "other-than-wage-earners." In order, therefore, that the occupational distribution of gainfully occupied persons of employer, own account, wage-earner and no pay status may be envisaged in its entirety and the predominance of agricultural occupations—so far at least as the males of "other-than-wage-earner" status are concerned—be clearly shown, Statement XXXI is presented giving the percentage of the gainfully occupied males and females, classified according to status, in each occupation group for Canada.

XXXI.—PERCENTAGE DISTRIBUTION OF GAINFULLY OCCUPIED POPULATION, BY INDUSTRIAL STATUS AND SEX, IN EACH OCCUPATION GROUP, CANADA, 1931

Occupation Group	P.C. of Gainfully Occupied									
	Males					Females				
	Total	Em- ployer	Own Account	No Pay	Wage- Earner	Total	Em- ployer	Own Account	No Pay	Wage- Earner
All occupations.....	100-00	100-00	100-00	100-00	100-00	100-00	100-00	100-00	100-00	100-00
Agriculture.....	33-97	74-73	61-16	93-26	9-91	3-82	78-69	8-57	7-25	0-30
Fishing, hunting, and trapping.....	1-45	0-51	5-94	0-50	0-51	0-07	0-08	0-78	0-02	0-01
Logging.....	1-35	0-42	0-11	0-10	2-05	—	—	—	—	—
Mining, quarrying, etc.....	1-80	0-13	0-49	0-01	2-74	1	0-02	—	—	1
Manufacturing.....	10-98	4-90	5-06	0-70	15-29	12-71	1-69	14-75	2-01	13-76
Electric light and power.....	1-00	1	—	0-01	1-60	1	—	—	—	1
Construction.....	6-22	2-99	4-57	0-27	8-10	0-01	0-03	—	—	0-02
Transportation and communi- cation.....	7-62	1-39	2-62	0-35	11-29	2-59	0-22	0-01	0-06	3-13
Warehousing and storage.....	0-83	0-02	1	1	1-33	1-23	—	1	1	1-50
Trade.....	7-97	10-18	9-93	1-15	8-03	8-13	10-86	7-62	4-89	8-35
Finance, insurance.....	1-11	0-53	1-31	1	1-34	0-09	0-02	0-22	—	0-08
Service.....	8-82	4-18	8-52	2-20	10-78	52-18	10-36	67-64	84-32	49-48
Clerical.....	3-81	—	1	0-12	6-12	17-56	0-03	0-41	1-27	21-20
Labourers, (other than agricul- tural, mining and logging)...	13-04	—	—	1-04	20-88	1-76	—	—	0-17	2-12
Unspecified.....	0-04	0-01	0-01	1	0-06	0-04	—	—	0-01	0-05

¹ Less than 0.005 p.c.

When one considers that although almost 34 p.c. of all males in gainful occupations in 1931 were found in agricultural occupations, only 10 p.c., roughly, of male wage-earners were employed in these primary pursuits, the significance of the percentage of total employers, own accounts, and unpaid family workers in agriculture is quite apparent. About 75 p.c. of the males of employer status, just over 60 p.c. of the own accounts and 93 p.c. of the no pays were engaged in agricultural occupations in 1931. In other words, of the total of 1,239,111 males of "other-than-wage-earner" status 907,298 or 73.22 p.c. were found in agricultural occupations. Since it might be shown that "Trade" and "Service" occupations provided employment for about the same proportion of total gainfully occupied males in each province and, combined, accounted for over 14 p.c. of the balance of the employers and over 18 p.c. of the remaining own accounts in 1931, it is clear that the relative importance of "other-than-wage-earners" to wage-earners in any province is a function almost wholly of the relative importance of agriculture to other occupations in that province.

For females the occupational distribution of "other-than-wage-earners" is not a matter of such importance in an analysis of this kind. This is so because of the fact that "other-than-wage-earners" do not constitute anything like the same proportion of total females in gainful occupations as they do of total gainfully occupied males, representing only 18 p.c. of all females in gainful occupations in 1931 as compared with 38 p.c. of the males. In other words, over four-fifths of the females were wage-earners as compared with over three-fifths of the males. An examination of Statement XXXI shows how this 18 p.c. of the females not in wage-earning occupations was distributed occupationally in 1931.

Over 76 p.c. of those of employer status were following agricultural occupations, over 67 p.c. of the total of own accounts were in the services and over 84 p.c. of the total of no pays were also in service. Since 76,394, or 65 p.c., out of a total of 118,022 females in "other than-wage-earner" occupations were engaged in service occupations, and over 70 p.c.—if to these are added the "other-than-wage-earners"—in trade, and since these occupations were well represented in every province, regional differences in the proportion of employers, own accounts and no pays in the total gainfully occupied were not of great consequence. It might be mentioned that 19 p.c. of all "other-than-wage-earner" females in Canada were engaged in agricultural occupations in 1931 with the proportion in these occupations being somewhat higher in the Prairie Provinces than in Canada as a whole.

Provincial Comparisons.—Having discovered from this analysis of the occupational distribution of the employers, own accounts, wage-earners and no pays the source of regional differences in the ratio of wage-earners to "other-than-wage-earners," it may now be appropriate to compare the composition of the gainfully occupied by provinces. As we have seen for gainfully occupied males the proportion of wage-earners to "other-than-wage-earners" varied by provinces according to the relative importance of agricultural occupations in the separate provinces. For females the services absorbed the bulk of the "other-than-wage-earners" and, since service occupations were important in every province, there was a much closer correspondence between provinces in the composition of gainfully occupied females than in the composition of gainfully occupied males.

XXXII.—GAINFULLY OCCUPIED POPULATION, BY INDUSTRIAL STATUS AND SEX, CANADA AND PROVINCES, 1931

Province	Employer		Own Account		No Pay		Wage-Earner	
	Males	Females	Males	Females	Males	Females	Males	Females
CANADA.....	387,886	18,906	549,721	54,781	301,504	44,335	2,022,260	547,837
Prince Edward Island.....	5,215	408	8,417	544	5,027	211	9,159	3,185
Nova Scotia.....	14,018	885	32,071	2,863	11,818	1,651	95,244	22,537
New Brunswick.....	13,794	808	23,806	1,820	14,163	1,522	66,810	17,922
Maritime Provinces.....	39,027	2,101	64,154	5,227	31,008	5,384	170,715	45,644
Quebec.....	92,602	4,360	95,331	12,914	99,091	24,012	535,203	161,136
Ontario.....	116,122	5,796	154,637	21,961	70,116	8,978	752,851	212,756
Manitoba.....	30,735	1,334	37,610	3,906	24,536	1,812	132,883	37,856
Saskatchewan.....	58,877	2,534	82,245	3,182	44,056	2,349	116,157	29,411
Alberta.....	37,734	1,902	71,604	2,888	27,399	2,255	116,065	26,416
Prairie Provinces.....	127,446	5,770	191,459	9,976	95,291	6,416	368,045	93,683
British Columbia.....	15,629	882	43,140	4,703	5,298	1,545	198,448	36,918

CENSUS OF CANADA, 1931

XXXIII.—PERCENTAGES OF GAINFULLY OCCUPIED POPULATION OF EACH INDUSTRIAL STATUS, BY SEX, CANADA AND PROVINCES, 1931

Industrial Status	Canada		Prince Edward Island		Nova Scotia		New Brunswick		Quebec	
	Males	Females	Males	Females	Males	Females	Males	Females	Males	Females
	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.
Total.....	100-00	100-00	100-00	100-00	100-00	100-00	100-00	100-00	100-00	100-00
Employer.....	11-89	2-84	18-75	9-38	9-15	3-17	11-70	3-66	11-26	2-15
Own account.....	16-86	8-23	30-26	12-61	20-94	10-25	20-07	8-25	11-70	6-38
No pay.....	9-24	6-66	18-07	4-85	7-72	5-91	12-01	6-90	12-04	11-86
Wage-earner.....	62-01	82-28	32-92	73-25	62-19	80-67	56-23	81-20	65-01	79-60

Industrial Status	Ontario		Manitoba		Saskatchewan		Alberta		British Columbia	
	Males	Females	Males	Females	Males	Females	Males	Females	Males	Females
	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.
Total.....	100-00	100-00	100-00	100-00	100-00	100-00	100-00	100-00	100-00	100-00
Employer.....	10-86	2-32	13-61	2-97	19-57	5-76	14-93	5-68	5-95	2-02
Own account.....	14-10	8-80	16-66	8-70	27-28	8-49	28-33	8-63	16-43	10-75
No pay.....	6-39	3-60	10-87	4-03	14-62	5-27	10-84	6-74	2-02	3-53
Wage-earner.....	68-65	85-28	58-86	84-30	38-53	78-48	45-90	78-95	75-59	83-70

No extended comment on Statements XXXII and XXXIII is necessary. The reasons for interprovincial differences in the composition of the gainfully occupied have been discussed in the foregoing. It is interesting to observe that the number of males of employer and of own account status in the Prairie Provinces exceeded the number in Ontario although the number of male wage-earners in these provinces was less than half the number in Ontario. The province of Quebec shows a slightly greater total of unpaid workers than the Prairie Provinces, although a smaller number of these were in agricultural occupations in Quebec than in the West. Of the 99,091 no pay males in Quebec 87,965 were in agriculture while in the Prairie Provinces 93,203 of the total of 95,991 no pays were agricultural workers. In the former province a considerable proportion of the balance were members of religious orders. No observation in respect to the composition of gainfully occupied females need be made except to point out that the rather large number of no pay females in Quebec was due to the prevalence of nuns in the teaching and nursing professions as well as in other occupations.

The relative proportion of employers, own accounts, no pays and wage-earners in the gainfully occupied population has been examined by locality. A similar study may be made by broad occupation groupings, that is to say, the composition of each occupation group from the standpoint of the relative number of employers, own accounts, no pays and wage-earners in the group may be described. Although the vast majority of "other-than-wage-earner" males were found in agricultural occupations and of "other-than-wage-earner" females in service occupations, nevertheless a comparison for each occupation group of the ratio of "other-than-wage-earners" to wage-earners has special concern for what will be said later with reference to the incidence of unemployment by occupation. Hence, Statement XXXIV is presented herewith giving the number and percentage of the total persons, male and female, in each occupation group according to whether they are employers, own accounts, no pays or wage-earners, for Canada, 1931.

XXIV.—NUMBER AND PERCENTAGE OF GAINFULLY OCCUPIED MALES AND FEMALES OF EACH INDUSTRIAL STATUS IN EACH OCCUPATION GROUP,¹ CANADA, 1931

Occupation Group	Total	Employer	Own Account	No Pay	Wage-Earner	Employer	Own Account	No Pay	Wage-Earner
MALES									
	No.	No.	No.	No.	No.	p.c.	p.c.	p.c.	p.c.
All occupations.....	3,261,371	387,886	549,721	301,504	2,022,260	11.89	16.86	9.24	62.01
Agriculture.....	1,107,766	289,880	336,230	281,188	200,468	25.17	30.35	25.38	18.10
Fishing, hunting, and trapping	47,408	1,955	33,535	2,406	10,379	4.19	68.84	6.08	21.59
Logging.....	43,995	1,538	589	290	41,450	3.72	1.34	0.65	94.28
Mining, quarrying, etc.....	58,585	515	2,705	42	55,323	0.88	4.02	0.07	94.43
Manufacturing.....	338,024	18,997	27,809	2,088	306,132	5.81	7.77	0.58	86.34
Electric light and power.....	32,453	16	-	27	32,410	0.05	-	0.08	99.87
Construction.....	202,970	11,596	26,757	803	163,814	5.71	13.18	0.40	80.71
Transportation and communication	248,598	5,402	14,371	1,063	237,762	2.17	5.78	0.43	91.62
Warehousing and storage.....	26,962	70	5	6	26,912	0.26	0.02	0.02	99.70
Trade.....	259,799	39,482	54,584	3,454	162,299	15.20	21.06	1.33	62.47
Finance, insurance.....	35,252	2,050	7,191	1	27,010	5.65	19.84	1	74.51
Service.....	287,625	16,230	46,811	6,837	217,947	5.64	16.28	2.31	75.77
Clerical.....	124,139	-	23	367	123,749	-	0.02	0.30	99.69
Labourers (other than agricultural, mining and logging)...	425,408	-	-	3,124	422,284	-	-	0.73	99.27
Unspecified.....	1,357	27	31	8	1,291	1.99	2.28	0.59	95.14
FEMALES									
	No.	No.	No.	No.	No.	p.c.	p.c.	p.c.	p.c.
All occupations.....	665,859	18,906	54,781	44,335	547,837	2.84	8.23	6.86	82.28
Agriculture.....	24,079	14,499	4,697	3,214	1,669	60.21	19.51	13.35	6.93
Fishing, hunting, and trapping	497	16	429	10	42	3.22	86.32	2.01	8.45
Mining, quarrying, etc.....	6	3	-	-	3	50.00	-	-	50.00
Manufacturing.....	84,657	319	8,078	892	75,308	0.38	9.54	1.05	89.03
Electric light and power.....	3	-	-	-	3	-	-	-	100.00
Construction.....	95	6	-	-	90	6.25	-	-	93.75
Transportation and communication	17,235	42	6	25	17,162	0.24	0.03	0.15	99.58
Warehousing and storage.....	8,200	-	-	1	8,199	-	-	0.01	99.99
Trade.....	54,113	2,054	4,175	2,156	45,713	3.80	7.72	4.00	84.49
Finance, insurance.....	571	4	120	-	447	0.70	21.02	-	78.28
Service.....	347,471	1,958	37,052	37,384	271,077	0.56	10.66	10.75	78.01
Clerical.....	118,927	6	224	565	116,133	1	0.19	0.48	99.32
Labourers (other than agricultural, mining and logging)...	11,707	-	-	75	11,632	-	-	0.64	99.36
Unspecified.....	297	-	-	3	294	-	-	1.01	98.99

¹ Less than 0.005 p.c.² See also Table 17 where information as to status of the gainfully occupied is given for the complete list of occupations.

A considerable number of males of employer status was found in manufacturing, construction, trade and service, though in none of these groups, with the exception of trade, did they form any substantial proportion of the total gainfully occupied males in the group. The majority of male employers in trade were retail and wholesale merchants comprising 38,907 of the 39,482 in this occupation group. No reference is here made to the preponderate importance of the 289,880 males of employer status in agriculture, who, as has been stated elsewhere, accounted for 75 p.c. of all gainfully occupied males of the status of employer, and represented over one-quarter of the total males in agricultural occupations. Agricultural occupations are so differently constituted from other occupations so far as the status of persons following these occupations is concerned that they deserve separate mention.

It is interesting to note that gainfully occupied males of own account status formed a not inconsiderable proportion of total males in several occupation groups. In fishing, hunting, and trapping they constituted 68.84 p.c. of the total in these occupations. The figure 27,809, for manufacturing may seem high but it must be remembered that manufacturing as an occupation group includes all persons following so-called "processing" occupations irrespective of the industry in which employed. The bulk of the own account males in manufacturing occupations belonged to the custom and repair industry group, there being 5,104 boot and shoe repairers, 6,398 blacksmiths, 4,371 mechanics (chiefly auto mechanics) and 3,160 tailors. Some 26,757, or 13.18 p.c. of the males in the building and construction trades were own accounts at the 1931 Census. In transportation the percentage of own accounts was lower. Almost 12,000 of the 14,371 shown in

Statement XXXIV were teamsters, truck drivers and taxi drivers. The small storekeeper still constitutes an important factor in the merchandising field, 45,035 of the 54,564 own accounts in trade being retail merchants. Males of own account status represented one-fifth of the total in trade. Real estate agents, insurance agents and stock and bond brokers made up the bulk of the own account class in finance and insurance. In service 46,811, or 16.28 p.c., of all males in the group were on own account. Many of these were engaged in the professions. For example, there were 8,181 physicians, 5,908 lawyers, 3,555 dentists, 1,692 musicians and music teachers and 1,329 accountants and auditors on own account. A substantial proportion was occupied in rendering personal services. The more important of these were barbers, 7,962 in number, small restaurant and lunch counter keepers numbering 4,352, and operators of small laundries and dyeing and cleaning establishments, 3,116 in all. Needless to add, the largest single class of own accounts was farmers, and the total of 336,230 in agricultural occupations constituted three-fifths of all own account males in Canada in 1931. Own account males formed 30 p.c. of all males in agricultural occupations.

No comment is necessary regarding gainfully occupied males of no pay status for in no group did they constitute an important element with, of course, the exception of agriculture. Most of the 6,637 in service were either priests, brothers or teachers in some religious order. Practically all of the 3,454 in trade were sales clerks in their fathers' stores. In manufacturing a number were apprentices to various skilled trades.

Turning again to Statement XXXIV it will be noticed that for almost every group gainfully occupied females of "other-than-wage-earner" status were relatively unimportant. Leaving out of consideration those occupational groups in which the number of females in 1931 was negligible, agriculture was really the only group where females of employer status were numerous and where they constituted a substantial proportion of the total in the group. Of the 2,054 females of employer status in trade, over 2,000 were operating retail stores and most of those in service were proprietors of restaurants, hotels, lodging houses and hairdressing establishments. Females on their own account represented a fair proportion of total occupied females in three or four groups. In agriculture, for example, though not so important as employers they constituted 20 p.c. of all females in the group. In manufacturing, practically all of the 8,078 females on own account were dressmakers (6,044), seamstresses (858) and milliners (582). In trade 4,041 of the 4,175 given in the table were owners of small stores. In service, where the majority of own account females was found, 18,320 were lodging house keepers, 8,795 were graduate nurses, 3,144 were musicians and music teachers and 2,959 were hairdressers. In neither manufacturing, trade, nor service, however, did females of own account status represent much more than 10 p.c. of total females in the occupation group. Finally, no pay females were important numerically only in the service group though they constituted a larger percentage (13.35 p.c.) of total females in the agricultural group. In trade there were over 2,000 salesgirls not receiving pay. These were mainly employed in stores operated by their parents. Of the 37,384 females of no pay status in the services 9,012 were teachers, 8,260 were persons reported as nuns, 7,344 were domestic servants, 4,250 were housekeepers and 3,315 were nurses-in-training. A number of those reporting "teacher", "nurse", "servant" and one or two other occupations of similar nature at the census were likewise members of religious orders so that the class "nun" does not represent the total in Canada but only those who were given no other occupation when enumerated.

This rather exhaustive consideration of the occupations of "other-than-wage-earners" and the proportionate importance of persons of employer, own account and no pay status in these occupations is an essential preliminary to the analysis, at a later stage, of the occupations of wage-earners. For there is no hard and fast division between persons of "other-than-wage-earner" status and those working for wage or salary. Indeed, at all times there is going on a shift from one status to the other. Men who were working on their own account yesterday are to-day wage-earners and to-morrow, perhaps, own accounts again. This does not mean that there is a continuously heavy movement from one class to the other, or that these movements occur only at certain periods of the year, or at a particular phase of the industrial cycle, though the seasonal and cyclical changes in status may be considerable. It does mean, however, that the wage-earning element in the gainfully occupied population is not such a fixed and easily measured class as is sometimes supposed.

In Canada, as no doubt elsewhere, one of the characteristics of industrial development has been a tendency for the individual unit of business to increase in size. This phenomenon has, of course, brought about a decline in the importance of a number of trades formerly carried on at home or in small shops on an independent basis and, conversely, increased the number of wage-earners working in factories. Probably during the upward trend of the industrial cycle, evolution in this direction is speeded up while during a depression there may be some slowing down in this movement.

It is opportune at this point to quote again from the study* recently made by the International Labour Organization on the combined effect of population changes, technical progress and economic development upon unemployment: "We have absolutely no idea whether the depression accelerates the flow of new workers to the labour market, or whether, on the contrary, it causes the surplus of unemployed wage-earners to change over to 'independent' work. It is probable that the former reaction is more marked than the latter but it is impossible to prove it." It would appear from this opinion that, all things considered, forces bringing persons into the labour market during the depression would probably be stronger than those drawing them away. Inability to find jobs may compel many men accustomed to being employed in the capacity of wage-earners to seek a livelihood on their own account, chiefly in a return to the land. On the other hand, a considerable number of persons who in better times have never been under any necessity to make their own living are forced to do so during a depression. They tend to swell the ranks of the wage-earners.

However this may be, it is relevant to repeat that one of the features of the 1931 Census was the considerable increase in the number of "lodging house keepers" on their own account. Many wives whose husbands' earnings had been greatly reduced owing to prolonged unemployment, and who, therefore, had to find some gainful employment themselves, probably were forced by household ties to take up occupations that could be carried on in the home. In so doing they did not directly increase the supply of labour looking for wage-earning jobs.

So far as unmarried girls are concerned the net effect of the depression upon the number seeking employment is harder to determine. No doubt many have come into the labour market whose families were no longer capable of supporting them at home. On the other hand, a number who in a period of prosperity accepted salaried positions have no doubt given up or lost these employments since the depression, and being in no great need of work have actually withdrawn from the ranks of women seeking gainful employment.

A word or two may be said concerning the flow between own account and wage-earner occupations at different seasons of the year. Seasonal variations in industrial activity no doubt cause considerable mobility of labour in a country such as Canada where climatic changes are severe. However, the shifts between occupations that occur probably do not involve changes in status of great consequence except, perhaps, those due to changes in the volume of employment in agriculture. Had the census been taken in the winter rather than in June the number of gainfully occupied persons reported as farmers on own account would have been less than the number actually shown. Some of these would still have been working on their own account in other primary pursuits, such as fishing and hunting. However, a number would have been returned as wage-earners, employed chiefly in logging, mining and construction. Similarly, a not insignificant number of farmers' sons reported in June 1931 as no pay farm labourers would have been enumerated as wage-earners in other occupations had the census been taken six months earlier. In general, then, it might be affirmed that the proportion of wage-earners in the total gainfully occupied population would likely be larger in the winter months than during the balance of the year.

Industrial Distribution.—Before concluding this examination of the relationship of the wage-earners to the gainfully occupied as a whole and to those classes which have been described as "other-than-wage-earner" a brief survey of this kind by industry will serve to supplement what has just been said regarding occupation. Owing to the fact that the proportions of gainfully occupied persons of employer, own account, no pay and wage-earner status do not differ materially for corresponding industry and occupation groups, as a comparison of Statements XXXIV and XXXV will show, the following remarks will be confined mainly to the wage-earners and their percentage importance in each industry group. In Statement XXXV a classification of the gainfully occupied by industry group and sex is given showing the number and percentage of employers, own accounts, no pays and wage-earners, in each industry group, for Canada, 1931.

* See footnote page 72.

XXXV.—NUMBER AND PERCENTAGE OF GAINFULLY OCCUPIED MALES AND FEMALES OF EACH INDUSTRIAL STATUS IN EACH INDUSTRY GROUP, CANADA, 1931

Industry Group	Total	Employer	Own Account	No Pay	Wage-Earner	Em- ployer	Own Account	No Pay	Wage-Earner
MALES									
	No.	No.	No.	No.	No.	p.c.	p.c.	p.c.	p.c.
All industries.....	3,261,371	387,886	549,721	301,504	2,022,260	11.89	16.80	9.24	62.01
Agriculture.....	1,103,899	289,865	336,248	281,111	196,675	26.26	30.46	25.47	17.81
Fishing, hunting, and trapping	47,274	1,979	32,495	2,418	10,382	4.19	68.74	5.11	21.96
Logging.....	49,709	1,635	603	303	47,168	3.29	1.21	0.61	94.89
Mining, quarrying, etc.....	71,608	513	2,430	55	68,610	0.72	3.39	0.08	95.81
Manufacturing.....	621,046	15,784	6,511	1,888	496,865	3.03	1.25	0.36	95.36
Electric light and power.....	17,487	16	-	-	17,471	0.09	-	-	99.91
Construction.....	284,667	11,616	26,279	1,267	215,505	4.56	10.32	0.60	84.62
Transportation and communi- cation.....	282,952	5,441	16,036	1,046	260,429	1.92	5.67	0.37	92.04
Trade.....	302,405	39,063	54,179	4,380	204,763	12.92	17.92	1.45	67.71
Finance, insurance.....	67,375	2,064	7,194	25	58,102	3.05	10.68	0.04	86.24
Service.....	377,418	19,877	67,691	8,732	281,118	5.27	17.94	2.31	74.48
Professional.....	97,351	2,365	25,470	5,770	63,756	2.42	26.16	5.93	65.49
Public administration.....	101,368	-	-	2	101,361	-	-	-	100.00
Recreational.....	13,799	811	1,354	59	11,575	5.88	9.81	0.43	83.58
Custom and repair.....	62,870	5,111	23,578	1,355	32,526	8.13	37.60	2.16	52.21
Business.....	4,886	222	1,035	7	3,622	4.64	21.18	0.14	74.13
Personal.....	97,209	11,378	16,254	1,539	68,088	11.70	16.72	1.58	69.99
Unspecified.....	165,529	23	55	279	165,172	0.01	0.03	0.17	99.78
FEMALES									
	No.	No.	No.	No.	No.	p.c.	p.c.	p.c.	p.c.
All industries.....	665,869	18,906	54,781	44,335	547,837	2.84	8.23	6.66	82.28
Agriculture.....	24,255	14,499	4,603	3,146	1,917	59.78	19.35	12.07	7.90
Fishing, hunting, and trapping	508	16	429	10	483	3.15	84.45	1.97	10.43
Logging.....	243	-	-	2	241	-	-	0.82	99.18
Mining, quarrying, etc.....	355	3	-	-	352	0.85	-	-	99.15
Manufacturing.....	110,216	171	182	111	109,752	0.16	0.17	0.10	99.58
Electric light and power.....	1,467	-	-	-	1,467	-	-	-	100.00
Construction.....	1,641	6	-	35	1,600	0.37	-	2.13	97.50
Transportation and communi- cation.....	23,315	42	6	21	23,246	0.18	0.03	0.00	99.70
Trade.....	85,029	2,041	4,392	2,252	76,344	2.40	5.17	2.05	89.79
Finance, insurance.....	24,965	3	84	17	24,861	0.01	0.34	0.07	99.58
Service.....	390,144	2,125	44,991	38,733	304,295	0.54	11.53	0.93	78.00
Professional.....	146,391	113	13,776	29,060	103,442	0.08	9.41	10.85	70.66
Public administration.....	15,514	-	-	-	15,514	-	-	-	100.00
Recreational.....	2,425	27	97	14	2,287	1.11	4.00	0.58	94.31
Custom and repair.....	18,530	192	7,944	252	10,442	1.02	42.19	1.34	55.45
Business.....	1,236	16	260	1	1,459	0.92	14.98	0.00	84.04
Personal.....	265,248	1,777	22,914	9,406	171,151	0.87	11.16	4.58	83.39
Unspecified.....	3,721	-	4	8	3,709	-	0.11	0.21	99.68

¹ Less than 0.005 p.c.

Statement XXXV provides very useful information to the student of unemployment in Canada. Presented in this summary form one can see at a glance what proportion of the total number of persons engaged in each important industry division was covered by the Unemployment Census of 1931.

Beginning with gainfully occupied males it is seen that only a minor proportion of the number employed in agriculture were wage-earners, not quite 18 p.c. This is important in view of the fact that 1,103,899 males were engaged in agriculture in 1931 and these represented about one-third of all gainfully occupied males. Only a little more than one-fifth of the males in the industry group, fishing, hunting, and trapping, were wage-earners. Of the total of 34,000 in fishing only a little more than 9,000 were wage-earners and less than 1,000 of the 13,000 in hunting and trapping. On the other hand, over 47,000 or about 95 p.c. of the 50,000 in logging were wage-earners. Completing the list of primary industry groups is mining and quarrying. In this group 68,610 or 95.81 p.c. of the total of 71,608 males were wage-earners. Summing up for the primary industry field it may be stated that only 18 p.c. of the males in agriculture, about 26 p.c. of those in fishing, and 8 p.c. of those in hunting and trapping at the 1931 Census were wage-earners. In logging and mining, however, 95 p.c. and 96 p.c. respectively of the males in these industries were employed as wage-earners.

In manufacturing and electric light and power practically all males were wage-earners. The 496,865 male wage-earners in manufacturing not only represented 95 p.c. of all males in the industry but actually constituted one-quarter of the total male wage-earners in Canada. In the construction industry the 215,505 male wage-earners accounted for 85 p.c. of the total in this industry. This was a higher percentage than might have been expected in view of the considerable number of small builders on own account. In transportation 260,429 or 92.04 p.c. of the males in the group were wage-earners. About 22,500 were employers, own accounts, and unpaid family workers. Practically all of the latter were found in local transportation, approximately 12,000 being engaged in cartage, trucking, and haulage and 6,000 were operating automobile garages. Over 302,000 males were found in trade in 1931 of whom 204,763 or 67.71 p.c. were wage-earners. As already mentioned the bulk of the "other-than-wage-earners" in trade were retail merchants. In the group finance and insurance, 86.24 p.c. of the males were wage-earners.

Three-quarters of the males in the service group or 281,118 out of 377,418 males were employed in a wage-earning capacity, the percentage varying considerably in the different types of service. In the sub-group, professional service, about two-thirds of the total were wage-earners, a substantial proportion of the remainder being doctors, lawyers and dentists on own account. Public administration which employed over 100,000 males was, of course, composed entirely of persons receiving a wage or salary. About 84 p.c. of the males in recreational service were wage-earners while in custom and repair only a little over 50 p.c. were working in this capacity. In the latter sub-group the unit of business is small and, therefore, is certain to be composed to some considerable degree of persons on own account. As a matter of fact, most of the "other-than-wage-earners" in this sub-group were blacksmiths, shoe repairers, tailors, laundrymen, operators of auto repair shops, and dyeing and cleaning establishments of self-dependent or own account status. Three-quarters of the males in business service occupied wage or salaried jobs. The proportion of wage-earners in personal service was lower, being about 70 p.c. of the total, though numerically fairly large, amounting in all to 68,000. Of the 29,000 males in personal service of "other-than-wage-earner" status the majority were proprietors of barber shops, restaurants, and hotels. Finally, almost 100 p.c. of the males in the unspecified group were wage-earners. Most of these were labourers belonging to no specific industry, classing themselves at the census as "general" labourers normally employed on "odd jobs."

It will be seen that the unemployment survey in 1931 covered over 90 p.c. of all gainfully occupied males in the following industrial divisions: logging, mining, manufacturing, electric light and power, transportation, public administration, and unspecified. Over 80 p.c. of those in construction, finance and insurance, and recreational service were included in the survey and over two-thirds of the males in trade, professional, business, and personal service. Just over 50 p.c. of the males in custom and repair were covered by the census of unemployment. Only a minority of those in agriculture, fishing, and hunting and trapping were included in the 1931 survey, about 18 p.c. of those in agriculture, 26 p.c. of those in fishing, and 8 p.c. of the total in hunting and trapping.

For females the proportion of the gainfully occupied to whom the unemployment inquiry applied was much greater than for the males, being 82.28 p.c. as compared with 62.01 p.c. for males. However, only 7.90 p.c. or a little less than 2,000 of the 24,000 females in agriculture were covered by this inquiry. In most other industry groups a high proportion of the females were wage-earners and thus were included in the census of unemployment. Even in service 304,295 or 78 p.c. of all females engaged therein were wage-earners. Over 83 p.c. of the large number in personal service, or 171,151 out of 205,248, were employed as wage-earners. The proportion of female wage-earners in professional service was 71 p.c. and in custom and repair just 55 p.c. There were, of course, many female dressmakers, seamstresses, and milliners on own account in this subdivision of service.

A comparison of the distribution of the gainfully occupied and of the wage-earners by industry is of interest. Since such a small proportion of the total gainfully occupied in agriculture were wage-earners and since the weight of the numbers in this industry was heavy, a percentage distribution of the wage-earners by industry shows marked variation from a similar distribution of the gainfully occupied. This is particularly true with respect to males. Statement XXXVI, where the two distributions are given, demonstrates this fact.

XXXVI.—PERCENTAGE DISTRIBUTION OF GAINFULLY OCCUPIED AND WAGE-EARNING POPULATIONS, BY INDUSTRY GROUP AND SEX, CANADA, 1931

Industry Group	Percentage Distribution					
	Gainfully Occupied			Wage-Earners		
	Both Sexes	Male	Female	Both Sexes	Male	Female
All industries.....	100-00	100-00	100-00	100-00	100-00	100-00
Agriculture.....	28-73	33-85	3-64	7-73	9-73	0-35
Fishing, hunting, and trapping.....	1-22	1-45	0-08	0-41	0-51	0-01
Logging.....	1-27	1-52	0-04	1-84	2-33	0-04
Mining, quarrying, etc.....	1-83	2-20	0-05	2-68	3-39	0-06
Manufacturing.....	16-07	15-98	16-55	23-60	24-37	20-03
Electric light and power.....	0-48	0-54	0-22	0-74	0-86	0-27
Construction.....	6-53	7-81	0-25	8-45	10-66	0-29
Transportation and communication.....	7-80	8-68	3-50	11-04	12-88	4-24
Trade.....	9-87	9-27	12-77	10-94	10-13	13-94
Finance, insurance.....	2-35	2-07	3-75	3-23	2-87	4-54
Service.....	19-54	11-57	58-59	22-78	13-90	55-54
Professional.....	6-21	2-08	21-99	6-51	3-13	18-88
Public administration.....	2-97	3-11	2-33	4-55	5-01	2-83
Recreational.....	0-41	0-42	0-36	0-54	0-57	0-42
Custom and repair.....	2-08	1-93	2-83	1-68	1-62	1-91
Business.....	0-17	0-15	0-26	0-20	0-18	0-27
Personal.....	7-70	2-98	30-82	9-31	3-36	31-24
Unspecified.....	4-31	5-08	0-56	6-57	8-17	0-68

It will be noticed that over one-third of the gainfully occupied males were engaged in agriculture in 1931 but less than 10 p.c. of the male wage-earners. Important as this industry is, from the point of view of the number finding employment therein the exclusion of the wage-earners in agriculture from schemes of social insurance would not involve, as at first might be thought, such an important proportion of the total wage-earners. In the winter season the proportionate importance of the wage-earners in agriculture would be still less. The next

XXXVII.—NUMBER AND PERCENTAGE OF MALE WAGE-EARNERS, BY INDUSTRY GROUP, CANADA AND PROVINCES, 1931

No.	Province	Male Wage-Earners in									
		All Industries		Agriculture		Logging, Fishing, and Trapping		Mining, Quarrying		Manufacturing	
		No.	P.C.	No.	P.C.	No.	P.C.	No.	P.C.	No.	P.C.
1	CANADA.....	2,022,260	100-00	196,675	100-00	57,550	100-00	68,610	100-00	496,865	100-00
2	Prince Edward Island.....	9,159	0-45	2,273	1-16	351	0-61	2	1	920	0-19
3	Nova Scotia.....	95,244	4-71	6,173	3-14	5,122	8-90	16,900	24-63	15,650	3-15
4	New Brunswick.....	66,310	3-28	5,882	2-99	4,020	7-00	1,021	1-49	12,905	2-60
5	Maritime Provinces.....	170,713	8-44	14,328	7-59	9,499	16-51	17,923	26-18	29,475	5-93
6	Quebec.....	535,203	26-47	23,118	11-75	16,543	28-75	7,931	11-56	147,125	29-61
7	Ontario.....	732,851	37-22	63,590	32-33	11,305	19-64	18,026	25-27	238,882	48-08
8	Manitoba.....	132,883	6-57	19,762	10-05	1,247	2-17	1,817	2-79	22,245	4-48
9	Saskatchewan.....	116,157	5-74	37,637	19-14	419	0-73	773	1-13	7,702	1-57
10	Alberta.....	116,006	5-74	25,599	13-17	747	1-30	10,762	15-69	11,804	2-38
11	Prairie Provinces.....	365,045	18-05	83,298	42-33	2,413	4-19	19,459	29-61	41,843	8-42
12	British Columbia.....	198,448	9-81	12,341	6-27	17,790	30-91	11,278	16-44	39,539	7-96

¹ Less than 0-005 p.c.

important industry group is manufacturing. About 16 p.c. of all males in gainful occupations found employment in this industry and about 25 p.c. of all male wage-earners. Similarly, in construction, transportation, trade, and service, the remaining important groups, a somewhat larger proportion of total male wage-earners was found in each of these groups than of all gainfully occupied males. The effect of the minor importance of agriculture in an industrial distribution of male wage-earners as compared with its more important place in a corresponding distribution of the gainfully occupied is clearly evident from the foregoing.

For females there is no outstanding variation between the distribution of the gainfully occupied and of the wage-earners by industry groups. Just over 16 p.c. of all gainfully occupied females were found in manufacturing as compared with 20 p.c. of the female wage-earners. Females were largely concentrated in the service group, over 58 p.c. of the total gainfully occupied and over 55 p.c. of those in wage-earning employments appearing in this group. Those employed

in service were mainly confined to two subdivisions, professional and personal. Actually 22 p.c. of all gainfully occupied females in Canada and 19 p.c. of the total wage-earners were engaged in professional service, and as much as 31 p.c. of the total gainfully occupied females and of the total female wage-earners as well were employed in personal services. The only other group in which females were well represented was trade. In this group were found 13 p.c. of total gainfully occupied females and 14 p.c. of all female wage-earners at the 1931 Census.

PART B—REGIONAL SURVEY OF EMPLOYMENT AND UNEMPLOYMENT AMONG WAGE-EARNERS

Regional Differences.—Before concluding this chapter some attention might be given, first, to the regional distribution of the wage-earners in the major divisions of industry shown in Statement XXXV and, secondly, to the distribution by industry of the wage-earners in each province. In doing so it is hoped that a better conception will be gained of just what unemployment in some of the more important divisions of industry means to any particular part of Canada. The following statement shows how the male wage-earners in the leading industries were distributed by locality in 1931.

A comparison of the regional distribution of the wage-earners in all industries combined with the distribution for each industrial division discloses a number of important differences. For male wage-earners it will be observed that the distribution by provinces of those in agriculture differs markedly from the provincial distribution of total males in all industries combined. For example, only 11.75 p.c. of the male wage-earners in agriculture were found in the province of Quebec in 1931 though 26.47 p.c. of all male wage-earners resided in this province. On the other hand, 42.35 p.c. of the males in agriculture were located in the Prairie Provinces though only 18.05 p.c. of total male wage-earners had their place of residence in these provinces.

XXXVII.—NUMBER AND PERCENTAGE OF MALE WAGE-EARNERS, BY INDUSTRY GROUP, CANADA AND PROVINCES, 1931

Male Wage-Earners in															No.
Electric Light and Power		Construction		Transportation and Communication		Trade		Finance, Insurance		Service		Unspecified			
No.	P.C.	No.	P.C.	No.	P.C.	No.	P.C.	No.	P.C.	No.	P.C.	No.	P.C.		
17,471	100.00	215,505	100.00	260,429	100.00	204,763	100.00	58,102	100.00	281,118	100.00	165,172	100.00	1	
44	0.25	858	0.40	1,184	0.45	957	0.47	191	0.32	1,148	0.41	1,231	0.75	2	
762	4.36	9,555	4.43	12,955	4.97	6,915	3.38	1,561	2.69	9,406	3.35	10,247	6.20	3	
370	2.17	5,798	2.69	9,850	3.77	5,770	2.82	1,121	1.93	6,541	2.33	13,317	8.06	4	
1,185	6.78	16,211	7.52	25,287	9.70	15,642	7.63	3,873	6.67	17,085	6.08	24,786	15.01	5	
4,891	27.99	73,001	33.87	64,383	24.72	53,761	26.26	17,087	29.41	75,400	26.82	51,963	31.46	6	
7,893	45.18	74,198	34.42	88,045	33.81	78,225	38.20	23,288	40.08	103,921	36.97	45,478	27.53	7	
1,295	7.41	13,232	6.14	21,074	8.09	16,982	8.29	4,282	7.37	19,221	6.84	11,623	7.04	8	
629	3.60	9,523	4.42	18,523	7.11	11,604	5.67	3,218	5.54	17,163	6.11	8,876	5.37	9	
573	3.28	8,662	4.02	17,448	6.70	11,982	5.85	2,635	4.55	18,265	6.50	9,928	6.01	10	
8,497	48.59	51,417	23.86	57,045	21.90	40,568	19.81	10,455	17.99	54,649	19.44	27,487	16.61	11	
1,005	5.75	20,678	9.59	27,269	10.47	18,567	9.07	4,419	7.61	30,053	10.69	15,509	9.39	12	

In the case of the industry group, logging, fishing, and trapping, 16.51 p.c. of the males in the group were found in the Maritime Provinces though these provinces only accounted for 8.44 p.c. of all male wage-earners. This was due in the main to the prominence of the fishing industry in Nova Scotia and, to a lesser degree, to the employment offered by the logging industry in New Brunswick. Based on the regional distribution of wage-earners pertaining to all industries Quebec was well represented in these primary pursuits, especially in logging, though Ontario was under-represented, while in the Prairie Provinces these industries were of negligible importance as sources of employment for wage-earners. Over 30 p.c. of all male wage-earners in logging, fishing and trapping were found in British Columbia, though less than 10 p.c. of total males in wage-earning employments belonged to this province.

So far as the remaining primary industry, *viz.*, mining and quarrying, is concerned the Maritimes accounted for over one-quarter of the total male wage-earners in this industry due, of

course, to the employment created by the Nova Scotia coal mining industry. An almost equal number was employed in the metal mines of Ontario. However, in both Ontario and Quebec male wage-earners were proportionately less fully represented in the mining industry than in all industries combined. Due to the fact that over 10,000 males found employment in mining, (principally coal mining, in Alberta), the Prairie Provinces were adequately represented in this industrial division. British Columbia with more than 11,000 males employed in mining, or over 16 p.c. of the total males in this industry, was over-represented on the basis of the proportionate importance of the total wage-earners in this province to the total in all provinces combined.

Coming next to the manufacturing group of industries it will be noted that 77.69 p.c. of the 496,865 male wage-earners in manufacturing in Canada were found in Ontario and Quebec combined. Incidentally over 80 p.c. of all male wage-earners in the non-ferrous smelting, chemical, and miscellaneous subdivisions of manufacturing, and almost 95 p.c. in the textile subdivision, were located in these two provinces. Since a lower percentage—63.69 p.c.—of total males in all industries in Canada were found in Ontario and Quebec together, it is clear that they gave employment to a considerably more than expected proportion of the wage-earners in manufacturing industries. On the other hand, the Maritime Provinces, British Columbia, and especially the Prairie Provinces were inadequately represented in manufacturing on the basis of the proportion of the total male wage-earners in all industries combined found in these provinces. For electric light and power 45 p.c. of male wage-earners in the industry were found in Ontario. In no other province, with the exception of Quebec and Manitoba, was the percentage of males in this industry as high as in all industries combined. It will be noted in connection with construction that over one-third of all male wage-earners in the industry were found in the province of Quebec at the 1931 Census. This matter is further dealt with in a subsequent section.

The distribution by provinces of male wage-earners in the transportation and communication fields did not vary appreciably at the 1931 Census from the distribution of total wage-earners in

XXXVIII.—NUMBER AND PERCENTAGE OF FEMALE WAGE-EARNERS, BY INDUSTRY GROUP, CANADA AND PROVINCES, 1931

No.	Province	Female Wage-Earners in									
		All Industries		Agriculture		Logging, Fishing, and Trapping		Mining, Quarrying		Manufacturing	
		No.	P.C.	No.	P.C.	No.	P.C.	No.	P.C.	No.	P.C.
1	CANADA.....	547,837	100.00	1,917	100.00	294	100.00	352	100.00	109,752	100.00
2	Prince Edward Island.....	3,185	0.58	16	0.83	2	0.68	-	-	322	0.29
3	Nova Scotia.....	22,537	4.11	41	2.14	34	11.56	39	11.08	2,120	1.93
4	New Brunswick.....	17,922	3.27	27	1.41	19	6.46	3	0.85	2,122	1.93
5	Maritime Provinces.....	45,644	7.97	84	4.39	55	18.71	48	11.93	4,564	4.10
6	Quebec.....	161,136	29.41	294	15.34	24	8.16	39	11.08	45,721	41.66
7	Ontario.....	212,756	38.84	748	39.02	52	17.69	120	34.09	51,196	46.65
8	Manitoba.....	37,856	6.91	168	8.76	8	2.72	12	3.41	3,179	2.90
9	Saskatchewan.....	29,411	5.37	151	7.88	3	1.02	5	1.42	650	0.59
10	Alberta.....	26,416	4.82	243	12.68	8	2.72	53	15.06	1,244	1.13
11	Prairie Provinces.....	95,685	17.10	569	29.52	19	6.46	70	19.89	5,075	4.62
12	British Columbia.....	36,618	6.68	229	11.95	144	48.68	81	23.01	3,198	2.91

all industries and the same may be said for trade. A slightly smaller proportion of the total male wage-earners in transportation and communication was found in Quebec and Ontario than was the case for the combined industries. On the other hand, these provinces accounted for as much as 69.49 p.c. of the total male wage-earners in finance and insurance as compared with 63.69 p.c. of total males in all industries in Canada. The distribution by provinces of male wage-earners in the service group corresponds fairly closely with the distribution based on total males in all industries combined.

Finally, with respect to the unspecified industry group it will be noted that over 15 p.c. of the males in the group were located in the Maritime Provinces, New Brunswick in particular accounting for a relatively high proportion of the total in the group. Quebec with 31.46 p.c. of the total in the unspecified group also showed a higher proportion of males in this group than might have been expected considering that only 26.47 p.c. of all male wage-earners in Canada were found in this province. Since this unspecified group is made up largely of general labourers,

158,505 of the total in the group being so classified, and since the percentage of unemployment among them was noticeably high in 1931, the proportion of the total wage-earners in this group in each province is of some importance.

It might be stated that the apparent over-representation of the unspecified industries in New Brunswick and Quebec does not necessarily imply that the casual labourer was relatively more common in these provinces than elsewhere in 1931. Rather it seems to have been due mainly to differences in interpretation of the rules governing the enumeration of the industry of the wage-earner. Wage-earners unemployed on the census date in particular were very commonly reported as having no customary industry, the expression "odd jobs" being entered in the industry column of the schedule, though many would appear to have been employed fairly steadily in some one industry.

Outstanding differences between the regional distribution of total female wage-earners in all industries combined and of female wage-earners in specific industry groups were few in number as a reference to Statement XXXVIII will indicate. In the primary industry groups the number of female wage-earners was so small that no comment upon their regional distribution is necessary. Of the 109,752 females in the manufacturing industries in 1931, 96,917 or 88.31 p.c. were found in Ontario and Quebec combined. This percentage might be compared with the proportion (68.25 p.c.) of all female wage-earners in Canada living in these two provinces. The next industrial division in which female wage-earners were employed to any extent was transportation and communication. In this division of industry they were fairly well represented in each province, being somewhat under-represented in Quebec and the Prairie Provinces and over-represented in British Columbia in relation to the proportionate importance of all wage-earners in these provinces. It is interesting to note that only 22.28 p.c. of the total females in trade in Canada were found in Quebec as compared with 29.41 p.c. of all female wage-earners in the Dominion. In finance and insurance Ontario, as would be expected, accounted for a considerable proportion of the total

XXXVIII.—NUMBER AND PERCENTAGE OF FEMALE WAGE-EARNERS, BY INDUSTRY GROUP, CANADA AND PROVINCES, 1931

Female Wage-Earners in														No.
Electric Light and Power		Construction		Transportation and Communication		Trade		Finance, Insurance		Service		Unspecified		
No.	P.C.	No.	P.C.	No.	P.C.	No.	P.C.	No.	P.C.	No.	P.C.	No.	P.C.	
1,467	100.00	1,600	100.00	23,246	100.00	76,344	100.00	24,861	100.00	304,295	100.00	3,709	100.00	1
4	0.27	4	0.25	98	0.42	465	0.61	75	0.30	2,185	0.72	14	0.38	2
53	3.61	74	4.63	980	4.22	3,076	4.03	525	2.11	15,481	5.09	114	3.07	3
33	2.25	31	1.94	812	3.49	2,601	3.52	432	1.74	11,639	3.82	113	3.05	4
90	6.15	109	6.81	1,890	8.15	6,838	9.18	1,035	4.16	29,505	9.65	241	6.50	5
400	27.27	302	24.50	6,274	26.99	17,012	22.28	7,098	28.55	82,590	27.14	1,292	34.83	6
784	53.44	660	41.25	9,128	39.26	32,016	41.94	10,782	43.37	105,888	34.80	1,384	37.31	7
72	4.91	121	7.56	1,481	6.37	7,515	9.84	1,982	7.97	23,083	7.59	253	6.28	8
35	2.39	103	6.44	979	4.21	3,212	4.21	1,007	4.05	23,095	7.59	171	4.61	9
31	2.11	91	5.69	907	3.90	3,616	4.74	1,142	4.59	18,874	6.20	147	3.96	10
138	9.41	516	18.69	5,487	14.74	14,345	18.79	4,151	16.06	65,054	21.55	551	14.89	11
55	3.75	124	7.75	2,529	10.88	6,741	8.83	1,818	7.31	21,438	7.05	241	6.50	12

females in these fields of employment for women. In the Maritime Provinces, on the contrary, the opportunities for employment in finance and insurance seem to be quite limited. Finally, though 188,478 female wage-earners or 61.94 p.c. of the total in service were found in Ontario and Quebec combined, it should be recalled that 68.25 p.c. of total female wage-earners in Canada were located in these provinces. On this basis in all other provinces female wage-earners were adequately represented in the services.

Provincial Differences.—The facts revealed in this regional analysis of the wage-earners in each of the major divisions of industry do not in themselves fully indicate the relative importance from the standpoint of employment of the various industries found in each province. This is so because of the disproportionate weight of the large number of wage-earners in the provinces of Ontario and Quebec in most industries shown in Statements XXXVII and XXXVIII. Hence a further statement is presented giving a percentage distribution of the wage-earners by industry group for each province.

XXXIX.—PERCENTAGE DISTRIBUTION OF MALE AND FEMALE WAGE-EARNERS, BY INDUSTRY GROUP, CANADA AND PROVINCES, 1931

No.	Industry Group	Percentage Distribution of Wage-Earners in									
		Canada		Maritime Provinces		Prince Edward Island		Nova Scotia		New Brunswick	
		Males	Fe-males	Males	Fe-males	Males	Fe-males	Males	Fe-males	Males	Fe-males
1	All industries.....	100-00	100-00	100-00	100-00	100-00	100-00	100-00	100-00	100-00	100-00
2	Agriculture.....	9-73	0-35	8-89	0-19	24-82	0-50	6-48	0-18	8-87	0-15
3	Logging, fishing, and trapping.....	2-85	0-05	8-66	0-19	3-83	0-06	5-38	0-15	6-07	0-11
4	Mining, quarrying, etc.....	3-39	0-06	10-60	9-10	0-02	-	17-74	0-17	1-54	0-02
5	Manufacturing.....	24-57	20-03	17-87	10-46	10-04	10-11	16-43	9-41	19-46	11-84
6	Electric light and power.....	0-88	0-27	0-08	0-21	0-48	0-13	0-80	0-24	0-57	0-18
7	Construction.....	10-06	0-29	9-50	0-28	9-37	0-13	10-03	0-33	8-74	0-17
8	Transportation and communication.....	12-88	4-24	13-88	4-88	12-90	3-08	13-60	4-25	14-40	4-53
9	Trade.....	10-13	13-94	7-99	14-28	10-45	14-00	7-20	13-65	8-70	15-02
10	Finance, insurance, etc.....	2-87	4-54	1-68	8-30	2-00	2-35	1-64	2-32	1-08	2-41
11	Service.....	13-90	55-54	10-01	67-15	12-53	68-60	9-88	68-69	9-85	64-94
12	Unspecified.....	8-17	0-68	14-58	0-65	13-44	0-44	10-76	0-51	20-08	0-63

A distribution of this kind brings out striking differences between provinces in the relative importance of various industries in providing employment for wage-earners. For example, though only 9.73 p.c. of all male wage-earners in Canada were employed in agriculture in 1931 as much as 32.40 p.c. of the males in Saskatchewan, 24.82 p.c. in Prince Edward Island, and 22.33 p.c. in Alberta were found in this industry. Almost 9 p.c. of the male wage-earners in British Columbia were employed in logging, fishing, and trapping though the percentage in this industry for all provinces combined was less than 3 p.c. Although mining gave employment to only 3.39 p.c. of total males in wage-earning occupations in Canada, in Nova Scotia the percentage in this industry was 17.74 of total male wage-earners of that province. The percentage of 9.28 for Alberta males was likewise high in comparison with the Dominion figure.

Turning to the secondary industry, manufacturing, it will be observed that there was considerable variation among the provinces in the percentage of males employed in this industry. Almost 25 p.c. of the male wage-earners in Canada were found in manufacturing at the 1931 Census. In Ontario, the percentage was as high as 31.73 and in Quebec, 27.49. Just under 20 p.c. of the males in British Columbia and in New Brunswick were employed in manufacturing, in Manitoba and in Nova Scotia slightly more than 16 p.c., in Alberta and Prince Edward Island 10 p.c., and about 7 p.c. in Saskatchewan.

On the other hand, construction was more evenly represented by provinces. In Canada just over 10 p.c. of the males were engaged in this industry and in most provinces the percentage was only slightly greater or less than this figure. In Quebec the percentage reached 13.64 while in Alberta it was as low as 7.47. The percentage for Quebec was probably greater than normal owing to the special conditions prevailing in this industry in 1931. As stated in the Bureau of Statistics' *Annual Review of the Employment Situation in Canada during 1931*, where it refers to the province of Quebec, the execution of unemployment relief projects, together with work on several large industrial undertakings, resulted in a higher level of employment in construction during eight months of 1931 than for the same months in the preceding year.

At the 1931 Census 12.88 p.c. of total male wage-earners in Canada were found in transportation and communication. In each of the provinces of Ontario and Quebec the percentage was lower than the Canada figure. In the Maritime Provinces, in British Columbia, and especially in the Prairie Provinces the percentages were above that shown for the Dominion. Trade accounted for 10 p.c. of the male wage-earners in Canada at this census. In Ontario and Quebec a similar percentage of total male wage-earners in these provinces was found in the trade division. Less than 10 p.c. of male wage-earners were employed in trade in the Maritimes, about 10 p.c. in Saskatchewan, Alberta, and British Columbia, and almost 13 p.c. in Manitoba. The higher percentage for Manitoba was probably due to the importance of the mail-order business in this province. Finance employed less than 3 p.c. of the male wage-earners in Canada and approximately the same percentage in each of the provinces. Though in most provinces about 14 p.c. of male wage-earners were employed in the services, the Maritime Provinces actually showed 10.01 p.c. in this field of employment. In the unspecified industries all provinces, with the exception of the Maritimes, showed less than 10 p.c. of total males so reported. In New Brunswick one-fifth of all male wage-earners in that province failed to report a specific

XXXIX.—PERCENTAGE DISTRIBUTION OF MALE AND FEMALE WAGE-EARNERS, BY INDUSTRY GROUP, CANADA AND PROVINCES, 1931

Percentage Distribution of Wage-Earners in															No.
Quebec		Ontario		Prairie Provinces		Manitoba		Saskatchewan		Alberta		British Columbia			
Males	Fe-males	Males	Fe-males	Males	Fe-males	Males	Fe-males	Males	Fe-males	Males	Fe-males	Males	Fe-males	Fe-males	
100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	1
4.32	0.18	8.45	0.35	22.32	0.60	14.87	0.44	32.40	0.51	22.33	0.92	6.22	0.03	2	
3.09	0.01	1.50	0.02	0.66	0.02	0.94	0.02	0.36	0.01	0.64	0.03	8.96	0.39	3	
1.48	0.02	2.39	0.06	5.69	0.07	1.44	0.03	0.67	0.02	9.28	0.20	5.68	0.22	4	
27.49	28.37	31.73	24.06	11.46	6.48	10.74	8.40	6.71	2.21	10.18	4.71	19.92	8.73	5	
0.91	0.25	1.05	0.37	0.68	0.15	0.97	0.19	0.54	0.12	0.49	0.12	0.51	0.15	6	
13.64	0.24	9.86	0.31	8.61	0.54	9.96	0.32	8.20	0.35	7.47	0.34	10.42	0.94	7	
12.03	3.89	11.60	4.29	15.69	3.66	15.86	3.91	15.95	3.33	15.04	3.66	13.74	6.91	8	
10.04	10.56	10.39	15.05	11.11	15.51	12.78	19.85	9.99	10.92	10.33	13.69	9.36	18.41	9	
3.19	4.40	3.09	5.07	8.86	4.41	3.22	5.24	2.77	3.42	2.53	4.32	2.23	4.96	10	
14.09	51.25	13.80	49.77	14.97	69.44	14.46	60.88	14.78	75.53	15.75	71.45	15.14	68.60	11	
9.71	0.80	6.04	0.65	7.51	0.59	8.75	0.62	7.64	0.58	5.97	0.56	7.82	0.66	12	

industry. As already pointed out this high percentage seems to be due more to enumeration procedure than to there being an excessive number of casual labourers in this province.

Since, in the distribution of male wage-earners by industry, the proportionate importance of the unspecified group is substantial in almost every province, Statement XL is added giving a percentage distribution of male wage-earners in specified industries by industry group for each province. A comparison of the figures in this table with those given in Statement XXXIX should be made where a more exact measure of the relative importance of specific industries by provinces is desired.

XL.—PERCENTAGES: MALE WAGE-EARNERS IN EACH INDUSTRY GROUP CONSTITUTE OF TOTAL MALE WAGE-EARNERS SPECIFYING THEIR INDUSTRY, CANADA AND PROVINCES, 1931

Percentage Distribution of Male Wage-Earners in												
Industry Group	Canada	Maritime Provinces	Prairie Provinces	Nova Scotia	New Brunswick	Quebec	Ontario	Prairie Provinces	Manitoba	Saskatchewan	Alberta	British Columbia
All specified industries.....	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Agriculture.....	10.59	9.32	28.67	7.26	11.10	4.78	8.99	24.67	16.30	35.08	23.74	8.75
Lumbering, fishing, and trapping.....	3.10	6.61	4.43	6.03	7.60	3.42	1.60	0.71	1.03	0.39	0.68	9.72
Mining, quarrying, etc.....	3.69	12.28	0.03	19.38	1.93	1.64	2.55	5.68	1.58	0.72	9.87	6.16
Manufacturing.....	26.78	29.80	11.60	18.41	24.35	30.45	33.77	12.89	18.35	7.26	10.82	21.81
Electric light and power.....	0.84	0.37	0.56	0.90	0.72	1.01	1.12	0.74	1.07	0.59	0.53	0.55
Construction.....	11.60	11.11	10.82	11.24	10.94	15.11	10.49	9.37	10.91	8.88	7.94	11.30
Transportation and communication.....	14.02	16.25	14.93	15.24	18.02	13.32	12.45	16.80	17.38	17.27	16.00	14.91
Trade.....	11.03	9.35	12.07	8.14	10.89	11.13	11.06	12.08	14.00	10.82	10.98	10.15
Finance, insurance.....	3.13	1.97	2.41	1.84	2.12	3.54	3.29	3.09	3.53	3.00	2.69	2.42
Service.....	15.14	11.75	14.48	11.07	12.34	15.60	14.69	16.19	15.83	16.00	16.75	16.43

¹ Percentages based on total wage-earners in specified industries as opposed to all industries as in Statement XXXIX.

As is shown in Statement XXXIX, in no province did the percentage of female wage-earners in the primary industries form any appreciable part of the total female wage-earners. For manufacturing it will be seen that 20.03 p.c. or about one-fifth of all female wage-earners in Canada were employed in this division of industry at the last decennial census. In the Maritimes the percentage in manufacturing was just 10.46. Quebec showed the highest proportion of female wage-earners in manufacturing among all the provinces, the percentage in this province being 28.37. Ontario with 24.06 p.c. of its female wage-earners employed in this industry came next. In the Prairie Provinces only 5.42 p.c. of female wage-earners were found in manufacturing, the percentage in Saskatchewan being as low as 2.21. The percentage for British Columbia was 8.73.

The next industrial division in which females were employed to any extent was transportation and communication. The proportion of total female wage-earners classified to this industry in 1931 was rather small, being 4.24 p.c. for Canada as a whole. In each province the percentage in transportation and communication did not fluctuate greatly from the Dominion percentage, though it will be noted that almost 7 p.c. of all female wage-earners in British Columbia were employed in this industrial division. In trade females were more fully represented. About 14 p.c. of total female wage-earners in Canada found employment in this industry in 1931. A

similar percentage of female wage-earners in the Maritime Provinces was engaged in trade while in Quebec the percentage was lower, at 10.56. Ontario and the Prairie Provinces showed approximately 15 p.c. of the female wage-earners in those provinces in trade, the percentage for Manitoba, it will be observed, being rather high, at 19.85, while for Saskatchewan the percentage was only 10.92. British Columbia female wage-earners were well represented in this division, 18.41 p.c. of their number being employed in trade.

Over half of all female wage-earners in Canada in 1931 found employment in the services, the percentage being 55.54 p.c. As was pointed out in the analysis of Statement XXXVI, personal service alone accounted for 31.24 p.c. of total female wage-earners in Canada and professional service 18.88 p.c. of the total. Over two-thirds (67.15 p.c.) of the female wage-earners in the Maritime Provinces were engaged in the services. Quebec and Ontario with 51.25 p.c. and 49.77 p.c., respectively, were somewhat below the Dominion percentage. On the other hand, almost 70 p.c. of the female wage-earners in the Prairie Provinces found employment in service, the percentage for Saskatchewan being as high as 78.53. Finally, in British Columbia 58.60 p.c. of all female wage-earners in that province were employed in service. This concentration of female wage-earners in the services should be kept in mind when consideration is being given to the incidence of unemployment by industry and sex.

"No Job" and "Lay-Off" in Industry.—With these remarks on the provincial distribution of the wage-earners in each important industry and, conversely, with respect to the industrial distribution of the wage-earners in each province, we may now turn to Statement XLI which gives the basic facts regarding employment and unemployment by industry on the date of the census. In this section the number wholly unemployed or those reporting no job and the number on lay-off on the census date will be distinguished from the total wage-earners in each industry so as to show the employment-unemployment ratio by industry as it existed on the date of the 1931 Census. Actually the number of male wage-earners not at work on the date

XLI—WAGE-EARNERS, BY INDUSTRY GROUP AND SEX, SHOWING THE NUMBER AND PERCENTAGE NOT AT WORK OWING TO NO JOB AND LAY-OFF, CANADA, JUNE 1, 1931

Industry Group	Wage-Earners									
	Total		Number Not at Work				Percentage Not at Work			
			No Job		Lay-Off		No Job		Lay-Off	
	Males	Females	Males	Females	Males	Females	Males	Females	Males	Females
All industries.....	2,022,260	547,837	358,497	36,146	37,165	5,450	17.73	6.60	1.84	0.99
Agriculture.....	196,675	1,917	28,850	214	296	8	14.67	11.16	0.15	0.42
Logging, fishing, and trapping.....	57,550	294	19,638	54	931	16	34.12	18.37	1.62	5.44
Mining, quarrying, etc.....	68,610	352	11,277	37	8,989	5	16.44	10.51	13.10	1.42
Manufacturing.....	496,865	109,752	66,682	9,321	15,185	3,500	13.42	8.49	3.06	2.63
Vegetable products.....	56,359	16,482	5,662	1,497	840	368	10.05	9.08	1.49	2.23
Animal products.....	39,687	11,045	5,407	1,102	729	581	13.62	9.98	1.84	5.26
Textile products.....	45,862	48,911	6,083	4,377	1,488	1,351	12.89	8.95	3.17	2.76
Wood products; printing, etc.....	131,801	14,272	18,869	1,947	3,106	206	14.32	7.34	2.35	1.44
Iron and its products.....	137,393	6,533	21,870	465	7,280	187	15.92	7.12	5.31	2.86
Non-ferrous metal products.....	31,550	5,126	3,334	358	684	101	10.57	6.98	2.17	1.97
Non-metallic mineral products.....	29,849	1,856	3,268	127	728	20	10.95	6.84	2.44	1.08
Chemical and allied products.....	12,447	2,913	1,011	158	140	36	8.12	5.42	1.12	1.24
Miscellaneous products.....	10,827	2,614	1,208	100	187	40	11.15	7.27	1.73	1.53
Electric light and power.....	17,471	4,467	1,379	188	40	5	7.89	2.73	1.05	0.34
Construction.....	215,505	1,600	66,862	150	2,782	10	31.03	9.38	1.29	0.63
Transportation and communication.....	260,429	23,246	29,819	980	4,754	216	11.45	4.22	1.83	0.93
Railway transportation.....	142,861	4,491	12,265	206	3,221	34	8.59	4.59	2.25	0.76
Water transportation.....	36,159	827	6,548	55	630	5	18.10	7.01	1.74	0.60
Road transportation.....	45,945	1,014	8,021	82	393	5	16.39	8.09	0.81	0.49
Other.....	32,451	16,914	2,086	634	505	172	8.20	3.75	1.56	1.02
Trade.....	204,763	76,344	19,631	5,112	1,521	829	9.59	8.01	0.74	1.07
Retail.....	161,101	67,519	16,136	5,401	1,205	734	10.02	7.99	0.75	1.09
Wholesale.....	43,554	8,703	3,479	710	318	86	7.99	8.16	0.73	0.99
Wholesale-retail dealing.....	108	22	16	1	1	—	14.81	4.55	—	—
Finance, insurance.....	58,102	24,861	2,890	1,318	150	73	5.13	5.30	0.26	0.29
Service.....	281,118	304,296	25,135	16,548	1,725	1,376	8.94	5.44	0.61	0.45
Professional.....	63,756	103,442	2,745	3,298	199	379	4.31	3.19	0.27	0.37
Public administration.....	101,301	15,514	6,947	408	545	74	6.86	2.63	0.54	0.48
Federal and Provincial.....	52,886	12,474	1,299	297	195	59	2.45	2.38	0.37	0.47
Municipal.....	47,986	2,902	5,646	110	350	15	11.76	3.79	0.73	0.52
Recreational.....	11,575	2,287	1,394	205	121	25	12.04	9.01	1.05	1.09
Custom and repair.....	32,826	10,442	5,687	843	416	137	17.02	8.07	1.27	1.31
Business.....	3,622	1,459	318	133	27	19	8.78	9.12	0.75	1.30
Personal.....	68,038	171,151	8,144	11,660	448	742	11.97	6.81	0.66	0.43
Unspecified.....	168,172	3,709	86,244	1,372	648	31	52.21	36.99	0.39	0.84

of the census due to these two causes combined constituted 93.75 p.c. of all males not at work while for females 86.87 p.c. of the total not at work reported one or other of these two causes.

On June 1, 1931, there were 358,497 male wage-earners or 17.73 p.c. of the 2,022,260 males in wage-earning employment out of a job. In other words, a little less than one-fifth of the male wage-earners in Canada had no job of any kind on the census date. In addition, 37,165 males or 1.84 p.c. of the total male wage-earners in the country were not at work owing to lay-off. These two classes, the "no jobs" and the "lay-offs," represented the portion of the wage-earners not at work on the census date owing to industrial conditions, which are known as the "wholly unemployed" and "temporarily stopped" classes in the British statistics of unemployment. By contrast, only 36,146 females or 6.60 p.c. of the 547,837 female wage-earners in Canada reported no job as the reason for not being at work on June 1, 1931, while 5,450 or 0.99 p.c. of the total were on lay-off on the census date.

In comparing unemployment due to no job by industry it will be noted that 28,850 or 14.67 p.c. of the males in agriculture were out of a job on the date of the census, a somewhat lower percentage than was recorded for all industries, though grain growing, with a percentage unemployed of 20.92 p.c., was notably higher. On the other hand, the 19,638 males reporting no job on this date in the logging, fishing, and trapping group of industries, 17,551 of whom, as we have seen, were found in logging, represented 34.12 p.c. of all males in this group. In the remaining primary division, mining and quarrying, the number not at work on June 1, 1931, due to no job was 11,277 or 16.44 p.c. of the total in this division. The percentage unemployed in asbestos mining was as high as 31.95 p.c. on June 1, 1931, and in silver mining it was at its highest level at 37 p.c.

The percentage of the males in manufacturing reporting no job on the census date was less than the percentage for all industries combined. Out of 496,865 males in manufacturing 66,682 or 13.42 p.c. were not at work owing to lack of a job on that date. In most subdivisions of manufacturing the percentage reporting no job was nearer 10. The weight of the numbers in the iron and steel and wood product subdivisions, however, in which the percentages reporting no job were closer to 15, brought the percentage for manufacturing as a whole up to the figure given above. It might be mentioned that 7,962 or 21.10 p.c. of male wage-earners in sawmills were out of a job on June 1, 1931, while in agricultural implements and machinery manufacturing, automobiles, cycles and aircraft manufacturing and foundry products, with 23.16 p.c., 19.58 p.c. and 18.77 p.c., respectively, of their number unemployed on this date, unemployment among males was much above the average for the manufacturing industries as a whole. In electric light and power the proportion of male wage-earners out of a job on June 1, 1931 was only 7.89 p.c. Construction with 66,862 males reporting no job on the date of the census showed a very high number and percentage unemployed, the percentage in this industry being 31.03. The percentage reporting no job in building construction was 32.81 while in road, bridge, sewer, etc., construction combined the percentage was somewhat lower at 25.22, partly owing to the employment given by public works of this kind at the time of the census.

The percentage of male wage-earners out of a job on June 1, 1931, in the transportation and communication industries was considerably lower than the percentage for all industries combined. Out of a total of 260,429 male wage-earners in this industry 29,819 or 11.45 p.c. were without jobs on the census date. Railway transportation which employed well over half of the total males in the transportation and communication division showed only 8.59 p.c. of its number out of a job, while water and road transportation recorded 18.10 p.c. and 16.39 p.c., respectively, of their number with no job. The remainder, made up largely of employees of telephone and telegraph companies, showed a percentage of 9.20 having no job on June 1, 1931. Just under 10 p.c. of the males in trade were out of a job on the date of the census. Of the 19,631 reporting no job, 16,136 were in retail trade. The percentage of unemployment among males on the census date in coal and wood dealing, clothing, and leather goods was nearer 15 while, on the other hand, liquors and beverages, dairy products, flour and feed and optical goods showed percentages around 5. Less than 3,000 males or only 5.13 p.c. of total males in finance and insurance were out of a job on June 1, 1931.

Out of 281,118 male wage-earners in the services 25,135 or 8.94 p.c. were out of a job on the census date. The percentage reporting no job varied greatly in the different subdivisions of service. Only 2.45 p.c. of the males in Federal and Provincial Government services and 4.31 p.c.

of those in professional service were out of a job on that date. However, it should be noted that the percentage of unemployment among male employees of accountancy and engineering firms and among musicians was much above the average for professional service as a group. The percentage of 11.76 p.c. reporting no job in municipal service was higher than might be expected but this was no doubt due to many unemployed wage-earners who had worked on civic relief jobs some time prior to the census date telling enumerators that they were last employed by the "city." The percentage of male wage-earners in recreational service reporting no job was 12.04 and in custom and repair 17.02 the highest percentage shown for the services. The number out of a job on the census date in this latter group was 5,587 of which 2,075 had formerly been employed in auto repair shops. Unemployment on June 1, 1931, in the small industries composing the custom and repair group, such as the automobile repair, the blacksmith, the shoe repair shops, was about equal to the rate recorded for all industries combined but somewhat above that shown for the manufacturing division with which it is most closely allied. The last important subdivision of service, *viz.*, personal service, recorded 8,144 males or 11.97 p.c. of the total out of a job on the date of the census.

No single division of industry showed as large a number of males unemployed on June 1, 1931, as the unspecified industry division. As has been already explained this industry group was made up substantially of general or casual labourers, the class least able to hold jobs in good or bad times. Out of 165,172 males in this division 86,244 or 52.21 p.c. reported no job on the census date. This number represented almost one-quarter of all males out of a job on that date and hence was a factor of some importance in establishing the percentage of 17.73 p.c. reporting no job in all industries combined. Leaving out males in the unspecified industry the percentage of males reporting no job on June 1, 1931, in all other industries was 14.66.

Only 36,146 females or 6.60 p.c. of all female wage-earners reported no job on the date of the census. In the primary industries females constituted only a negligible portion of the wage-earners. In manufacturing, on the other hand, there were 109,752 females at the 1931 Census and of these 9,321 or 8.49 p.c. were out of a job. In the textile subdivision of manufacturing alone 48,911 females were found of whom 4,377 or 8.95 p.c. had no job on the census date. The next important industrial division in providing employment for females in 1931 was transportation and communication. In this division there were 23,246 female wage-earners and only 980 of these or 4.22 p.c. were out of a job on June 1, 1931. Telephone systems accounted for 15,282 of the total of 23,246 females in this division and for 521 of the 980 reporting no job on the census date. In trade, out of a total of 76,344 female wage-earners, 6,112 or 8.01 p.c. had no job on the first of June, 1931. Just over 28,000 females worked in general and departmental stores of whom 2,424 or 8.59 p.c. were unemployed on the census date. In finance and insurance only 1,318 or 5.30 p.c. of total females were wholly unemployed on that date. Finally, in the services which gave employment to 304,295 females or 55.54 p.c. of all female wage-earners in Canada, 16,548 or 5.44 p.c. reported no job on the first day of June, 1931. The two important subdivisions of service, professional and personal, showed 3.19 p.c. and 6.81 p.c. respectively, of their number out of a job on the date of the census. It will be noted that 11,660 out of an aggregate of 36,146 females in Canada with no job on the census date were found in the personal services.

The percentage of total wage-earners not at work on June 1, 1931, owing to lay-off was small, the percentages being 1.84 for males and 0.99 for females. However, it is worth noting that 8,989 males or 13.10 p.c. of total male wage-earners in mining and quarrying were not at work on the census date for this reason. In coal mining alone 8,168 males or 26.16 p.c. of the total in the industry were on lay-off on June 1, 1931. With regard to manufacturing industries just over 1,000 males or 6 p.c. of the total in the clothing industry reported lay-off on the census date. Further, in the iron and steel subdivision of manufacturing 7,289 wage-earners or 5.31 p.c. were on lay-off on that date. Over 2,000 of these belonged to automobile manufacturing.

For females it will be observed that 2,890 in manufacturing or 2.63 p.c. of the total in this division reported lay-off on June 1, 1931. The percentage of 5.26 p.c. shown for the animal products subdivision of manufacturing was caused by the high percentage of females in fish

curing and packing on lay-off on the census date. There were 581 females in animal products manufacturing who reported lay-off on June 1, 1931, some 390 of whom had been employed in fish curing and packing representing 22 p.c. of the total female wage-earners in that industry. Of the latter 363 were found in British Columbia, and most of these were Indian women.

Wage-earners reporting no job or lay-off on June 1, 1931 were distributed by provinces as follows:—

XLII.—NUMBER AND PERCENTAGE OF WAGE-EARNERS NOT AT WORK OWING TO NO JOB AND LAY-OFF, BY SEX, CANADA AND PROVINCES, JUNE 1, 1931

Province	Wage Earners Not at Work Owing to							
	No Job				Lay-Off			
	Males		Females		Males		Females	
	No.	P.C.	No.	P.C.	No.	P.C.	No.	P.C.
CANADA.....	358,497	100.00	36,146	100.00	37,165	100.00	5,450	100.00
Prince Edward Island.....	537	0.15	77	0.21	41	0.11	6	0.11
Nova Scotia.....	13,305	3.71	920	2.55	5,837	15.71	166	3.05
New Brunswick.....	13,324	3.72	869	2.40	764	2.06	101	2.95
Maritime Provinces.....	27,168	7.68	1,866	5.16	6,642	17.87	333	6.11
Quebec.....	91,319	25.47	10,244	28.34	4,873	13.11	1,267	23.25
Ontario.....	117,038	32.65	12,461	34.47	14,631	39.37	2,552	46.83
Manitoba.....	28,506	7.98	3,615	10.00	1,941	5.22	307	6.73
Saskatchewan.....	23,888	6.66	2,440	6.75	1,143	3.08	129	2.37
Alberta.....	22,178	6.19	2,110	5.84	4,575	12.31	171	3.14
Prairie Provinces.....	74,662	20.83	8,165	22.59	7,659	20.61	607	11.24
British Columbia.....	48,310	13.48	3,410	9.43	3,360	9.04	631	11.58

In comparing the distribution by provinces of the wage-earners not at work on the census date owing to no job or lay-off with the distribution by provinces of the total wage-earners (see Statements XXXVII and XXXVIII) certain interesting differences are disclosed. For example, the Eastern Provinces, i.e., Ontario, Quebec and the Maritimes, accounted for a higher proportion of the total wage-earners than of the wage-earners out of a job on the date of the census. The opposite, of course, was true of the Western Provinces. Actually 72.14 p.c. of total male wage-earners were located in the Eastern Provinces and 27.86 p.c. in the Western Provinces whereas just 65.70 p.c. of the males out of a job on the census date were found in the Eastern Provinces while the West accounted for 34.31 p.c. of this latter group. The percentage of total females in Canada in the Eastern Provinces at the 1931 Census was 76.21 and in the Western Provinces 23.78; the percentage of total females out of a job on the same date who resided in the Eastern Provinces was only 67.97, the percentage in the Western Provinces being 32.02. In other words, unemployment among wage-earners on June 1, 1931, was relatively greater in the Western Provinces than in Eastern Canada.

Just over 70 p.c. of the males on lay-off on the census date were found in the Eastern Provinces, or less than the proportion of total male wage-earners in this part of Canada, and just under 30 p.c. in the West. The percentage of total females on lay-off on June 1, 1931, living in Eastern Canada was 76.19 and in the West 23.82 or practically the same as the proportions of the total female wage-earners resident in Eastern and Western Canada respectively on this date.

Having now shown how the unemployed on the census date were distributed by provinces, it might be interesting to indicate the extent of unemployment by industry on that date in each province. In this connection Statements XLIII and XLIV are presented showing the number and percentage of wage-earners reporting no job on June 1, 1931, by main industry groups for each province.

XLIII.—WAGE-EARNERS REPORTING NO JOB, BY INDUSTRY GROUP AND SEX, CANADA AND PROVINCES, JUNE 1, 1931

No.	Industry Group	Wage-Earners Reporting No Job in									
		Canada		Maritime Provinces		Prince Edward Island		Nova Scotia		New Brunswick	
		Males	Females	Males	Females	Males	Females	Males	Females	Males	Females
1	All industries.....	358,497	36,146	27,168	1,866	537	77	13,306	920	13,326	869
2	Agriculture.....	28,850	214	1,879	6	47	2	539	1	793	2
3	Logging, fishing, and trapping.....	19,638	54	2,255	6	16	-	837	4	1,382	2
4	Mining, quarrying, etc.....	11,277	37	1,402	2	-	-	1,272	2	133	-
5	Manufacturing.....	66,682	9,321	8,182	184	23	7	1,556	79	1,603	98
6	Electric light and power.....	1,379	40	75	5	2	-	41	3	30	2
7	Construction.....	66,862	150	8,940	7	87	-	2,315	4	1,598	3
8	Transportation and communication.....	22,819	980	2,597	49	54	-	1,551	26	992	23
9	Trade.....	19,631	6,112	765	25	25	9	410	139	330	137
10	Finance, insurance.....	2,930	1,318	56	2	2	-	39	19	15	7
11	Service.....	25,135	16,548	915	1,227	33	57	527	606	353	564
12	Unspecified.....	86,244	1,372	10,686	70	248	2	4,216	37	6,160	31

XLIV.—PERCENTAGE OF WAGE-EARNERS REPORTING NO JOB IN EACH INDUSTRY GROUP, BY SEX, CANADA AND PROVINCES, JUNE 1, 1931

No.	Industry Group	P.C. of Wage-Earners Reporting No Job in									
		Canada		Maritime Provinces		Prince Edward Island		Nova Scotia		New Brunswick	
		Males	Females	Males	Females	Males	Females	Males	Females	Males	Females
1	All industries.....	17.72	6.60	13.91	4.28	5.86	2.42	13.97	4.06	20.10	4.85
2	Agriculture.....	14.67	11.16	9.88	5.86	2.07	12.50	8.73	2.44	13.48	7.41
3	Logging, fishing, and trapping.....	34.12	18.37	22.53	10.91	4.56	-	19.34	11.76	33.33	10.53
4	Mining, quarrying, etc.....	16.44	10.51	7.85	4.76	-	-	7.53	5.13	12.73	-
5	Manufacturing.....	13.42	8.49	10.80	4.03	2.17	0.94	3.73	12.42	4.02	-
6	Electric light and power.....	7.89	2.73	9.16	5.66	4.35	-	5.38	5.66	7.92	6.25
7	Construction.....	31.03	9.38	24.30	9.42	10.14	-	24.23	5.41	26.53	9.68
8	Transportation and communication.....	11.45	4.22	10.96	2.69	4.56	-	11.97	2.65	10.39	2.83
9	Trade.....	9.59	8.01	6.61	4.37	2.61	1.94	5.93	4.52	5.72	5.09
10	Finance, insurance.....	5.13	5.30	1.95	2.68	1.05	-	2.50	3.62	1.34	1.02
11	Service.....	8.94	5.44	6.34	4.19	2.87	2.61	5.60	3.91	5.40	4.85
12	Unspecified.....	52.21	36.99	49.80	29.05	20.15	14.29	41.16	32.46	46.26	27.43

In the Maritimes the percentage of unemployment among male wage-earners on the census date varied considerably by province. In New Brunswick 20.10 p.c. of the males were without employment on this date as compared with 13.97 p.c. for Nova Scotia and only 5.86 p.c. for Prince Edward Island. In these provinces as a whole 15.91 p.c. of all male wage-earners had no job on June 1, 1931. If the small number of 537 unemployed males in Prince Edward Island be subtracted, it will be seen that males out of a job on this date were almost evenly divided between Nova Scotia and New Brunswick, 13,305 being found in the former province and 13,326 in the latter.

In every industry with the exception of transportation and communication unemployment among males on June 1, 1931, was less in Nova Scotia than in Canada as a whole. It is noteworthy that while only 7.53 p.c. of the males in the relatively important industry of mining in this province reported no job on the date of the census 16.44 p.c. of the total in the industry in Canada had no job on that date. This difference is accounted for mainly by the fact that in Nova Scotia 15,924 out of a total of 16,900 males in mining were found in coal mining and of these as many as 4,044 reported lay-off on June 1, 1931 as compared with only 1,123 who reported no job. Incidentally, in Canada 8,168 males in coal mining were on lay-off on the census date and 4,315 out of a job but in mining as a whole there were just 8,989 on lay-off on this date as compared with 11,277 with no job. Though about one-quarter of the males in construction and

XLIII.—WAGE-EARNERS REPORTING NO JOB, BY INDUSTRY GROUP AND SEX, CANADA AND PROVINCES, JUNE 1, 1931

Wage-Earners Reporting No Job in															No.
Quebec		Ontario		Prairie Provinces		Manitoba		Saskatchewan		Alberta		British Columbia			
Males	Females	Males	Females	Males	Females	Males	Females	Males	Females	Males	Females	Males	Females		
91,319	10,244	117,038	12,461	74,602	8,165	28,596	3,615	23,888	2,440	22,178	2,110	48,310	3,410	1	
2,445	13	5,555	90	16,766	68	4,270	23	7,625	26	4,861	17	2,715	40	2	
6,304	6	3,598	9	848	1	471	1	90	-	288	-	6,552	32	3	
1,854	3	2,347	10	8,671	8	413	-	264	1	1,994	7	3,005	14	4	
18,345	4,462	32,160	3,677	5,602	614	2,940	395	1,160	79	1,502	140	7,392	384	5	
353	12	538	14	52	5	141	4	57	1	56	-	121	4	6	
19,450	32	23,020	57	11,820	46	5,164	19	3,355	13	3,321	14	8,012	8	7	
6,827	230	8,449	365	7,518	223	2,933	96	2,248	66	2,281	62	4,434	104	8	
4,677	1,159	6,879	2,139	5,039	1,792	2,162	953	1,435	375	1,442	434	2,271	737	9	
749	250	1,174	494	625	338	245	124	168	98	212	116	376	201	10	
6,770	3,701	8,062	5,085	5,739	4,715	2,136	1,824	1,693	1,658	1,854	1,223	3,657	1,739	11	
23,344	268	24,666	321	17,741	537	7,621	147	5,763	113	4,357	97	9,677	156	12	

XLIV.—PERCENTAGE OF WAGE-EARNERS REPORTING NO JOB IN EACH INDUSTRY GROUP, BY SEX, CANADA AND PROVINCES, JUNE 1, 1931

P.C. of Wage-Earners Reporting No Job in															No.
Quebec		Ontario		Prairie Provinces		Manitoba		Saskatchewan		Alberta		British Columbia			
Males	Females	Males	Females	Males	Females	Males	Females	Males	Females	Males	Females	Males	Females		
17.06	6.36	15.55	5.86	20.45	8.79	21.52	9.55	20.57	8.30	19.12	7.99	24.34	9.31	1	
10.58	4.42	8.74	12.03	20.18	11.74	21.61	13.69	20.26	17.22	18.77	7.00	22.00	17.47	2	
38.11	25.00	31.53	17.31	55.18	5.26	37.77	12.50	21.48	-	38.55	-	37.39	22.22	3	
23.38	7.69	13.02	8.33	19.86	11.43	21.54	-	34.15	20.00	13.53	13.21	26.03	17.28	4	
12.47	9.76	13.46	7.18	18.29	18.10	13.21	12.43	14.89	12.15	12.72	11.25	18.70	12.01	5	
7.22	3.00	6.32	1.79	11.77	3.62	10.69	5.56	13.83	2.86	11.52	-	12.04	7.27	6	
26.64	8.16	31.83	8.64	27.09	14.00	39.03	15.70	35.23	12.62	38.34	15.38	38.75	6.45	7	
10.60	3.81	9.60	4.00	18.17	6.51	14.15	6.41	12.14	6.74	13.07	6.41	16.26	4.11	8	
10.69	6.81	8.79	6.08	18.48	15.49	12.73	13.08	12.37	11.57	12.03	12.00	12.23	10.93	9	
4.38	3.65	5.04	4.56	5.89	8.18	5.72	6.26	5.22	9.73	7.22	10.16	8.51	11.06	10	
8.98	4.50	7.76	4.80	10.40	7.85	11.37	7.90	9.86	7.22	10.15	6.48	12.17	8.06	11	
45.31	20.74	54.22	37.64	64.68	64.79	65.57	63.06	64.93	66.08	62.89	63.99	62.40	64.73	12	

about two-fifths of those in the unspecified industry group were unemployed on the census date—and these numbered 6,533 males or approximately 50 p.c. of the total number of male wage-earners unemployed on June 1, 1931, in the province of Nova Scotia—the percentages out of a job in these industries were considerably lower in this province than in the Dominion. As would be expected water transportation with 993 males, or about 20 p.c. of its number, reporting no job on the date of the census contributed largely to the total unemployed in transportation and communication on this date.

In New Brunswick 13,326 males or one-fifth of all males in wage-earning occupations were totally unemployed on the census date. Unemployment in the primary industries on this date was slightly less than in Canada as a whole. The same was true of the secondary industries. Even the unspecified industry group with 46.26 p.c. of total males with no job on the census date showed less unemployment on June 1, 1931, in this province than in Canada. However, it will be recalled that 20 p.c. of all male wage-earners in New Brunswick were returned as customarily employed at "odd jobs" and were, therefore, classified to the unspecified industry group. The percentage of all male wage-earners in Canada in this group was only 8.17 p.c. Hence, although males in the specified industries in New Brunswick showed less unemployment on June 1, 1931, than was the case for the provinces as a whole the inclusion of the unspecified industry in the total raised the percentage of unemployment for all industries on the census date to 20.10 p.c. as compared with 17.72 p.c. for the Dominion.

The proportion of male wage-earners in Quebec reporting no job on June 1, 1931 was almost the same as for Canada. By industries there were some variations in this province from the rates of unemployment shown for Canada though the relative rates by industry corresponded fairly closely. There was less unemployment among male wage-earners in agriculture on June 1, 1931, in Quebec than in Canada but more in the other primary industries. Manufacturing, construction and unspecified industries together accounted for over 60,000 of the 91,319 males wholly unemployed in the province of Quebec on the date of the census. In manufacturing the percentage of males reporting no job at the Census of 1931 was 12.47 p.c. as compared with 26.64 p.c. and 45.31 p.c. respectively, for construction and unspecified. These rates of unemployment were somewhat lower than those recorded for the same industries in Canada as a whole.

The incidence of unemployment by industry on the census date among male wage-earners in Ontario also corresponded fairly closely with what has been already described for Canada. In the primary industries a smaller percentage of the males reported no job on the census date in Ontario than in Canada. In manufacturing, the percentages of males in Ontario and in Canada reporting no job were almost identical, at 13.46 p.c. and 13.42 p.c., respectively. The 32,160 males in the manufacturing industries of Ontario wholly unemployed on June 1, 1931, represented almost 50 p.c. of the total unemployed in manufacturing in Canada on that date. In transportation, trade, finance and service individually a smaller proportion of wage-earners reported no job in Ontario than in Canada generally, while the percentage for construction was about the same. Unemployment in the unspecified group was a little higher in Ontario than in the Dominion on the census date.

In the Prairie Provinces 16,756 male wage-earners in agriculture or one-fifth of the total in the industry reported no job on the census date. For Canada the percentage of males in this industry out of a job on June 1, 1931, was 14.67. With the exception of manufacturing where the percentage of males reporting no job on June 1, 1931, in the three provinces combined was slightly less than the corresponding percentage for Canada, each industry in these provinces recorded a higher percentage of unemployment among males on that date than was shown for the Dominion as a whole. As in other provinces the number and percentage of males reporting no job in the construction and unspecified groups were outstanding. In construction 11,840 males or 37.69 p.c. of all males in the industry in the Prairie Provinces were out of a job on the census date while 17,741 males or 64.68 p.c. of total males in the unspecified group reported no job on this date.

In British Columbia where the percentage of total male wage-earners out of a job on the census date was 24.34, the highest percentage shown for any of the provinces, there were also marked differences between industries in the percentage unemployed on that date. Unemployment in the primary industries was considerably above the average for Canada as a whole, 22.00 p.c. of the males in agriculture, 37.39 p.c. of those in logging, fishing, and trapping, and 26.63 p.c. of those in mining and quarrying reported no job on the census date. About one-third of the total males in Canada in the logging, fishing, and trapping and in the mining and quarrying groups combined who were out of a job on this date were found in the province of British Columbia. Of the remaining industries it will be noted 38.75 p.c. of the males in construction and 62.40 p.c. of those in the unspecified industry group reported no job on June 1, 1931. The percentage of males with no job on that date in manufacturing, transportation, trade and service was in every case considerably above the corresponding percentage for Canada.

The number of female wage-earners reporting no job on June 1, 1931 in Canada was only about one-tenth as large as the number of males. As has been shown, these females, 36,146 in all, had formerly been employed chiefly in the services, in manufacturing and in trade. In the Maritime Provinces where only 4.28 p.c. of total female wage-earners were wholly unemployed on the census date, 1,227 females out of the 1,866 with no job on that date were found in service. However, the percentage out of a job in service on June 1, 1931, was only 4.19 p.c. In Quebec 4,462 females out of a total of 10,244 reporting no job on June 1, 1931, belonged to manufacturing. The percentage wholly unemployed in this industry on the census date was 9.76. Trade

and service with 1,159 and 3,791 females respectively having no job on this date accounted for the bulk of the remainder in this province out of a job on June 1, 1931. Some 2,832 females out of the total unemployed in service had been connected with the personal services. In Ontario also manufacturing, trade and service accounted for the large majority of females reporting no job on the date of the census. It will be noted that the number and percentage wholly unemployed in manufacturing were less in this province than in Quebec. About 5,000 females or approximately 5 p.c. of the total in service were out of a job on this date. Unemployed females in personal service alone exceeded 3,500. In the Prairie Provinces over 12 p.c. of the female wage-earners in manufacturing and trade and about 7 p.c. of the total in service reported no job on the census date. Unemployment among females was greater in the Prairie Provinces than in Canada on this date. More than 50 p.c. of the unemployed females were found in the services though it should be remembered that about 70 p.c. of all female wage-earners in these provinces found employment in the service division. Almost 10 p.c. of total female wage-earners in British Columbia were out of a job on June 1, 1931, or 3,410 in all. Though 50 p.c. of these belonged to service the percentage unemployed on the census date in this group was somewhat less than in manufacturing, trade and finance and insurance, the rate for service being about 8 p.c. as compared with 11 or 12 p.c. for these other groups.

CHAPTER III

UNEMPLOYMENT IN RELATION TO THE INDUSTRIAL STRUCTURE

PART A—DATA AVAILABLE AND METHODOLOGY

Introduction.—To interpret properly the effect of the industrial structure upon unemployment we must consider the industrial structure from two viewpoints. First, we must analyse the evidence of variations in that structure as apparent in the latest available records and secondly, we must trace the evolution of that structure. The problem is somewhat akin to that of the scientist in studying the evolution of species. He first notes evidences among living creatures of essential similarities. He also notes peculiar evidences of adaptation to environment shown by these similar species living in different environments. Then by a study of fossil remains, he is able to reconstruct a time story of this adaptation to environment.

Our problem is simplified to a great extent because we have fairly authentic, although not exact, information covering the period beginning when the nature of industrial structure began to change significantly to the present. Where biologists have had to reconstruct the past from facts of the present, we have both present facts and significant figures of the past.

For the time being we are not concerned with remedies for unemployment, we are merely trying to relate present conditions with the processes which have caused these conditions to exist. It is a simple study of cause and effect. Accordingly, this chapter will aim at an analysis of the present industrial structure in Canada and its variation within itself.

Such findings as are verified will be recorded and related to time changes in industrial structure, an estimate of which values will be found in a later chapter.

Throughout the census data on unemployment runs a baffling dual phenomenon, *viz.*, the point of view of the wage-earner and the point of view of the work. Since the data, whether referring to unemployment during the year or as at a fixed day of that year, is collected on one day, *i.e.*, the last day of the year referred to, the viewpoint of the wage-earner is paramount—in other words, the industry is identified only through the report of the wage-earner that he is engaged in that industry. It is more than probable that he reports the industry where at present or where last employed and that he was employed in some other industry for part of the year. This may affect even the data of employment as on June 1 (though not as much as for the whole year). The influence of the industry upon unemployment is, therefore, badly obscured.

In mass data, it is possible to observe tendencies that can actually be measured, but to interpret them is very difficult when we have always to contend with this dual phenomenon. We can not have work without the worker and we can not have the worker without the work. When an industry loses a million working days in a year, it would seem at first sight to be an impersonal matter to the industry in that it would not matter to the industry whether its 10,000 men lost 100 days each or whether 5,000 men lost 200 days each—and it probably *would not* matter if the two alternatives were equally possible, but they are not. If the loss to the industry is measured in terms of the time lost by the men, then there is almost a mathematical necessity, at any rate a decided probability, that the small industry loses either a greater or a smaller percentage of time than the larger industry. The large industry and the small industry, therefore, can not be compared side by side. To eliminate this element of chance the large would have to be compared with an aggregate of the small—but this confuses the issue.

While the foregoing difficulties are serious, there are others still more so. One of the worst is lack of homogeneity in industry classes. The best classification is more or less artificial. Where, for example, could the line be drawn between the aggregates of industries known as, "Manufactures," and that known as "Services?" The type of work in the sub-classification of "Services" known as "Custom and repair," is more akin to "Manufactures" than to "Professional Services." The selling department of a manufacturing establishment would seem to be an industry separate in function from the manufacturing department and akin to the industry "Trade"—and yet it is classed as "Manufactures." Another lack of homogeneity, as already mentioned, is caused by differences in size, occasioning differences in organization and stability—in so far as stability depends upon size.

Before industries can be compared for unemployment, difficulties such as mentioned must be overcome. Obviously, neither a comparison of main classes nor of summaries of aggregates is adequate. A method of selection to procure homogeneity within the classes compared and to overcome other difficulties is the first step.

Method of Selecting the Data.—A primary consideration in choosing data on unemployment is the method of treating the behaviour of unemployment by sex. Should the male and female wage-earners of an industry be considered as identical, in so far as their liability to unemployment is concerned? Or should unemployment among males be considered separately from that among females? A cursory examination of census data shows that females have not the same degree of dispersion either in industry or occupation as have male wage-earners, *i.e.*, the bulk of female wage-earners are contained in a few typically female industries and occupations. The body of this chapter will, therefore, deal firstly with the male wage-earners in industry and the "industry" will be quantitatively the male content, unless otherwise stated.

In the conviction that summaries of aggregates artificially grouped under the main classifications were to be avoided, also to procure the maximum of variety as between homogeneous classes, it was decided first to bring under single review all the sub-classes. In this case a sub-class (*e.g.*, flour and grain milling) in a province is considered the unit to be known as "industry." Throughout this study, an "industry" must be understood to mean a sub-class in a province. If this sub-class is found in every province it will be counted as nine industries. All such sub-classes were brought under review by means of a scatter diagram in which the number of workers in the class was designated in the box-heading and the number of workers idle on June 1, 1931 in the stub. The number of industries representative of each class was then entered in the compartments thus formed. This method of showing unemployment was considered better than an array of percentages unemployed as it related the volume of unemployment to the absolute numbers involved. This scatter diagram is shown in Statement XLV.

The next step was to select from the industries a sample sufficiently large to exhibit all the possible varieties and causes of unemployment in all industries. The concept "unemployment" was measured, not by the percentage unemployed by industries, but by the trend from industry to industry of the probability that a wage-earner was not at work. This was regarded as a better measure than the percentage, chiefly because it tended to overcome inaccuracies and other discrepancies in reporting. In the calculation at the foot of Statement XLV, the average unemployment per wage-earner for each class interval of wage-earner is shown as the number idle per 100 wage-earners. This trend from class to class was measured and was regarded as the representative figure of unemployment.

It was next ascertained whether there was any tendency for this representative figure to increase or decrease with the size of the industry. The tendency in either direction was so slight that it seemed safe to neglect it, *i.e.*, the trend may be considered linear. (See Statement XLV.)

The sample selected consisted of three intervals located near the middle of the scatter diagram (Statement XLV) on the ground that the percentage not at work in the industries in these intervals (when obtained in the ordinary way) corresponded to the measure of trend as already mentioned.

It should be stated that in order to measure this trend it was found necessary to drop the three largest industries—(1) Building and structures in Quebec; (2) Building and structures in Ontario; (3) Mixed farming in Ontario. This step was taken on the grounds that these industries were first, too large and heterogeneous and second, so exceptional in the incidence of unemployment that their influence produced what was considered a false trend, *i.e.*, a trend non-representative of the main body of industries. This can be readily seen from their position in Statement L. The purpose of selecting this sample was, of course, to make a minute study of a number of representative industries, it being impossible to submit all the 1,420 industries in Canada to this minute study.

When the sample was thus provisionally selected it was subjected to several tests to ascertain its degree of representativeness. These tests were: (1) the number of industries represented, (2) the number of wage-earners, (3) the variation in unemployment compared with that of the whole (the measure of which was the standard deviation), (4) the number and kind of representatives it showed for each province, (5) its representativeness from the point of view of age distribution, (6) its representativeness when unemployment was measured by yearly figures instead of by June 1. (Other tests came up incidentally in the study as will be shown later.) That the sample satisfied all six tests will be shown in the next section.

XLV.—SCATTER DIAGRAM SHOWING FREQUENCY DISTRIBUTION OF INDUSTRY GROUPS,
ACCORDING TO INTERVALS OF SIZE OF GROUP IN RELATION TO NUMBER OF MALE
WAGE-EARNERS NOT AT WORK FOR ALL CAUSES, CANADA, JUNE 1, 1931

No.	Interval of Number Not at Work June 1	Industries Having Male Wage-Earners Numbering											
		Less than 200	200-400	400-600	600-800	800- 1,000	1,000- 1,200	1,200- 1,400	1,400- 1,600	1,600- 1,800	1,800- 2,000	2,000- 3,000	3,000- 4,000
1	Less than 20.....	561	45	7	3	4		1					
2	20- 40.....	85	64	18	12	3	3	1			1	1	
3	40- 60.....	20	37	34	7	2	1	1	1				2
4	60- 80.....	1	22	22	15	4		1	3	1			1
5	80- 100.....	1	9	16	16	10	6			1	1	2	1
6	100- 120.....		4	11	13	6	8	4	1	3	1	2	
7	120- 140.....		2	3	4	7	6	2	1	1	1		
8	140- 160.....		2	2	3	1	4	1	3	2		3	1
9	160- 180.....		1	1	3	1	5	2	2	1	1	2	
10	180- 200.....			1	5	3	5	4	2		1	1	1
11	200- 300.....			3	3	7	3	7	5	6	7	17	1
12	300- 400.....					1	3	1	4	2	4	14	4
13	400- 500.....					1	1	1	3	1	1	11	4
14	500- 600.....						2					4	1
15	600- 700.....											2	4
16	700- 800.....											1	
17	800- 900.....												1
18	900- 1,000.....												
19	1,000- 1,500.....											1	4
20	1,500- 2,000.....												1
21	2,000- 2,500.....												
22	2,500- 3,000.....												
23	3,000- 3,500.....												
24	3,500- 4,000.....												
25	4,000- 4,500.....												
26	4,500- 5,000.....												
27	5,000- 5,500.....												
28	5,500- 6,000.....												
29	6,000- 6,500.....												
30	6,500- 7,000.....												
31	7,000- 8,000.....												
32	8,000- 9,000.....												
33	9,000-10,000.....												
34	10,000-15,000.....												
35	15,000-20,000.....												
36	Total.....	668	186	118	84	50	47	26	25	18	18	64	23
37	Percentage not at work June 1.....	13.9	13.9	14.0	13.3	14.2	15.0	13.7	15.1	12.2	12.6	13.2	18.1

Trend of unemployment, 17-2 p.e.

Mean percentage idle in 122 groups taken as sample, 15-3.

Sample

XLV.—SCATTER DIAGRAM SHOWING FREQUENCY DISTRIBUTION OF INDUSTRY GROUPS,
ACCORDING TO INTERVALS OF SIZE OF GROUP IN RELATION TO NUMBER OF MALE
WAGE-EARNERS NOT AT WORK FOR ALL CAUSES, CANADA, JUNE 1, 1931

Industries Having Male Wage-Earners Numbering															Total	No.
4,000- 5,000	5,000- 6,000	6,000- 7,000	7,000- 8,000	8,000- 9,000	9,000- 10,000	10,000- 15,000	15,000- 20,000	20,000- 25,000	25,000- 30,000	30,000- 35,000	35,000- 40,000	40,000- 45,000	45,000- 50,000			
															621	1
1															189	2
															105	3
	1														71	4
															63	5
															53	6
		1	1												29	7
															22	8
															19	9
															23	10
1	1	1		1											63	11
1	2	1	1	1	1										40	12
5						1									29	13
4	4														15	14
3			1												10	15
			1	2											4	16
1	1	1	1		1										6	17
				1											1	18
2	2	2	4	1	3	2									21	19
	2			1	3	5									12	20
1				1	3	2									7	21
	2					1			1						4	22
						2	1								3	23
			1				1								2	24
								1							1	25
												①		①	2	26
						1	1								2	27
						1	2								3	28
									1						1	29
							1								1	30
																31
																32
																33
												①		①	1	34
													①	①	1	35
10	10	7	11	5	12	15	5	1	2			②	①	1,420	36	
14-7	17-8	10-6	15-8	13-7	19-4	19-4	28-8	18-8	16-3			20-2	36-8		37	

3 large industries for special study

Under the prevailing system of classification of wage-earners by industry, it is not possible to affix all workers to a specific industry. Some industries are so small and scattered that economy does not permit their being individually classified—the usual method being to incorporate them into groups attached to main and secondary classes, therein attaching to them a general but not specific classification. It is obvious that groups of this sort, known as "Others" in the census, can not be called "industries" (as the term is used in this text) because of their lack of homogeneity, each of these groups being in reality an aggregate of "industries".

There is also the case of the casual labourer and the chronic unemployed. These types can not be assigned to any one industry and so are classified under the main industry heading "Unspecified."

XLVI.—NUMBER AND PERCENTAGE OF MALE WAGE-EARNERS ACCORDING TO CLASSIFICATION OF INDUSTRIAL CONNECTION, CANADA, JUNE 1, 1931

Item	Male Wage-Earners	
	No.	P.C.
ALL CANADA.....	2,022,260	100.00
Specifically connected with <i>classified industries</i>	1,625,265	80.37
Specifically connected with <i>unclassified industries</i>	231,823	11.46
Not specifically connected with any industry.....	165,172	8.17

As it was decided to investigate unemployment in industry by means of a minute analysis of the individual industries of a representative sample, it can be readily seen that this sample *can not* be a sample of unemployment *in toto*, but only of 1,625,265 wage-earners who are classed as specifically connected with classified industries. As has been previously noted, the three largest industries were ruled out as non-representative. As these three totalled 138,113 wage-earners, our sample actually represents 1,487,152 wage-earners or about 73 p.c. of the total in Canada. Therefore, we are forced to reserve for separate study three differing groups (3, 4, 5 in statement below).

The following statement shows the markedly different degrees of unemployment of the different classes:—

XLVII.—NUMBER OF MALE WAGE-EARNERS AND NUMBER AND PERCENTAGE NOT AT WORK, BY INDUSTRIAL CONNECTION, CANADA, JUNE 1, 1931

Item	Male Wage-Earners		
	Total	Not at Work June 1	
		No.	P.C.
(1) ALL CANADA.....	2,022,260	422,076	20.87
(2) Specifically attached to 1,420 classified industries of less than 30,000 male wage-earners.....	1,487,152	251,843	16.93
(3) Specifically attached to unclassified industries.....	231,823	45,219	19.50
(4) Not specifically attached to any industry.....	165,172	90,091	54.54
(5) Specifically attached to 3 large industries (40,000 and over).....	138,113	34,923	25.28
(6) Sample of (3), 122 industries containing from 2,000-8,000 male wage-earners.....	410,490	62,955	15.34

No doubt it will be thought that the figure of unemployment given by the sample is too low (universe 16.93, sample 15.34). However, this figure is well within the limits of the expected difference between the universe and the sample.

Theoretical error of a random sample where N = number of cases, P = probability of figure, $Q = 1 - P$,

$$E = \sqrt{\frac{PQ}{N}}; \text{ here } P = .1534, Q = .8466, N = 122 \text{ from which } E = .01.$$

The probability of the universe is .1693, then the actual error is $.1693 - .1534 = .0159$, which difference is well within three times the theoretical error. In other words, for individual years the figure shown by the sample may be slightly low or high, but for any selected year we may say that the sample is representative.

Representativeness of the Sample.—Since the selection of such a sample is considered in itself one of the most important accomplishments of this chapter, also highly desirable for purposes additional to this study, the representativeness will now be shown in detail.

First, as can be seen from Statement XLVII, the size of the industry groups is limited so as to include none with less than 2,000 and none with more than 6,000 wage-earners. That is, we have a relative uniformity in the size of the industries in the sample. This was an important consideration since variability in size is always a source of trouble in a study of this kind.

Then, we have in the sample 122 industries with an aggregate of 410,490 wage-earners or 20.29 p.c. of all wage-earners in Canada. The percentage unemployed on June 1 was 15.3 as against 16.93 in the case of all the industries from which the sample was taken. This is satisfactorily close, but it must be mentioned once more that this is not considered as important as the fact that the percentage unemployed in the sample is about the same as that indicated in the *trend* in the industries, i.e., the number of persons unemployed from industry to industry per hundred wage-earners in the industry. This is a somewhat different concept from the percentage unemployed in the aggregate of industries (or the general average) for the latter contain or may contain several accidental features such as the grouping of favoured industries in one province, etc.

The standard deviation of the percentage not at work in the sample was 10.87, the percentages unemployed on June 1 varying from 1.2 to 54.5, and the yearly figures from 1.2 to 43.4. Thus the sample manifestly contains a sufficient variety of unemployment.

XLVIII.—REPRESENTATIVENESS OF SAMPLE WITH REGARD TO (a) TOTAL NUMBER OF MALE WAGE-EARNERS, (b) NUMBER NOT AT WORK JUNE 1, CANADA AND PROVINCES, 1931

(a) TOTAL MALE WAGE-EARNERS IN

Province	All Industries (1)	All Industries Less Unspecified Industrial Connection (2)	Sample (3)	Sample as P.C. of Col. 1 (4)	Sample as P.C. of Col. 2 (5)	No. of Industries in Sample (6)
CANADA.....	2,022,260	1,857,088	410,490	20.2	22.1	122
Prince Edward Island.....	9,150	7,928	2,040	22.3	25.81	1
Nova Scotia.....	95,244	84,997	27,992	29.3	32.93	7
New Brunswick.....	66,310	52,993	22,716	34.2	42.87	6
Quebec.....	525,203	483,240	126,773	23.6	26.23	36
Ontario.....	752,851	707,373	153,450	20.3	21.69	48
Manitoba.....	132,883	121,260	10,912	8.0	9.09	4
Saskatchewan.....	116,157	107,281	13,352	11.5	12.47	4
Alberta.....	110,005	106,077	19,463	11.6	12.34	4
British Columbia.....	198,448	182,839	39,756	20.0	21.73	12

(b) MALE WAGE-EARNERS NOT AT WORK JUNE 1, 1931 IN

Province	All Industries		All Industries Less Unspecified Industrial Connection		Sample	
	No. (1)	P.C. (2)	No. (3)	P.C. (4)	No. (5)	P.C. (6)
CANADA.....	422,076	20.8	331,985	17.6	62,955	15.3
Prince Edward Island.....	761	7.7	427	5.39	61	2.9
Nova Scotia.....	21,365	22.4	10,838	19.81	5,691	20.3
New Brunswick.....	15,152	22.8	8,099	16.42	4,906	21.6
Quebec.....	104,066	19.4	79,201	16.39	15,095	11.8
Ontario.....	140,666	18.6	114,785	16.22	19,108	12.4
Manitoba.....	31,916	24.0	24,671	19.85	1,444	13.2
Saskatchewan.....	25,884	23.2	19,987	18.63	3,357	29.3
Alberta.....	27,846	24.0	23,401	21.45	3,541	26.2
British Columbia.....	54,474	27.4	44,576	24.37	9,722	24.4

The above statement shows that the number of wage-earners shown in the sample by provinces is nearly perfect for Prince Edward Island, Quebec, Ontario and British Columbia. Nova Scotia and New Brunswick are too heavily represented and the Prairie Provinces are under-represented. This was regarded as satisfactory, however, chiefly due to the fact that the *kind* of industries shown for each province typified to a marked extent the actual industrial structure of each as can be seen by referring to Statement XLIX. The fact that "Grain growing" is shown only for Alberta and "Storage" (largely grain elevators) only for Saskatchewan would indicate that the great industry of the Prairies, grain growing, is not given adequate weight in the sample. This failing is clearly unavoidable in a sample of this sort as this specialization in one industry naturally makes for one of the largest of the industry groups, especially as the majority of wheat farmers go in for a certain amount of stock raising, etc., and as such are classified under mixed farming, thereby swelling an already large class.

This deficiency in regional representativeness, however, is not serious enough to affect the value of the sample for industry in Canada as a whole.

Referring to the second part of the preceding statement, we find as would be expected, that the unemployment on June 1, is considerably less for this sample than for the whole. However, when the "Unspecified industries" are taken out, we find that there is not a serious discrepancy. With regard to the provinces the same holds true. Unemployment in the sample, except in Saskatchewan and Alberta is lower than the figures for the whole. However, Nova Scotia, New Brunswick, Saskatchewan, Alberta and British Columbia are reasonably close to the original figures while Ontario, Quebec, Manitoba and Prince Edward Island are slightly lower.

The figures for unemployment during the year, as can be seen from Statement XLIX, are representative to a slightly greater extent than the figures for June 1.

A further test for representativeness will be shown later.

XLIX.—SELECTED SAMPLE OF 122 INDUSTRIES IN THE NINE PROVINCES, SHOWING MALE WAGE-EARNERS, NUMBER AND PERCENTAGE LOSING TIME, NUMBER AND PERCENTAGE NOT AT WORK JUNE 1 BY CAUSE, TOTAL WEEKS LOST AND AVERAGE PERCENTAGE OF YEAR LOST PER WAGE-EARNER, CANADA, YEAR ENDED JUNE 1, 1931

Province and Industry	Male Wage-Earners								Weeks Lost during Year Ended June 1, 1931 from All Causes	Average Weeks Lost per Wage-Earner, as P.C. of 52
	Total	Losing Time during Year		Not at Work June 1, Due to						
		No.	P.C.	All Causes		Sickness, Accident, etc. ¹				
				No. (4)	P.C. (5)	No. (6)	P.C. (7)			
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)		
Prince Edward Island—										
1. Mixed and general farming.....	2,046	230	11.24	61	2.9	16	0.8	4,000	3.75	
Nova Scotia—										
1. Mixed and general farming.....	5,368	1,559	29.04	577	10.7	61	1.1	30,027	10.75	
2. Fishing.....	2,808	909	32.37	295	10.5	36	1.3	18,682	12.78	
3. Forestry and logging.....	2,293	1,051	45.83	651	28.3	42	1.8	20,383	17.09	
4. Iron smelting, converting, refining, rolling (Mfg.).....	3,227	2,571	79.67	1,115	34.5	70	2.2	62,881	37.46	
5. Building and structures.....	4,923	3,229	65.59	1,396	28.3	177	3.6	72,699	28.34	
6. Steam railways.....	4,405	1,380	31.32	483	10.9	87	2.0	24,281	10.59	
7. Water transportation.....	4,968	2,243	45.14	1,174	23.6	105	2.1	50,014	19.34	
New Brunswick—										
1. Mixed and general farming.....	5,323	2,050	38.51	827	15.6	47	1.0	42,735	15.42	
2. Forestry and logging.....	3,109	2,315	74.46	1,381	44.4	63	2.1	55,083	34.05	
3. Sawmill products.....	2,745	1,991	72.53	788	28.6	44	1.6	45,597	32.03	
4. Pulp and paper (Mfg.).....	2,640	1,351	51.17	646	20.7	60	2.7	28,430	20.69	
5. Building and structures.....	3,219	2,062	64.05	833	25.8	87	2.7	45,431	27.13	
6. Steam railways.....	5,680	1,512	26.61	633	9.3	78	1.3	25,684	8.09	
Quebec—										
1. Dairy farming.....	4,839	791	16.34	380	7.8	32	0.7	17,309	0.88	
2. Asbestos mining.....	2,787	2,122	76.13	1,349	48.4	68	2.5	44,455	30.67	
3. Quarries, gravel pits; salt wells.....	2,582	1,450	56.15	544	21.0	67	2.6	31,079	23.13	
4. Biscuits and confectionery (Mfg.).....	2,011	719	35.75	221	10.9	22	1.1	14,018	13.40	
5. Bread and other bakery products (Mfg.).....	5,105	1,425	27.91	571	11.1	74	1.4	30,527	11.48	
6. Liquors, beverages (not aerated waters) (Mfg.).....	2,263	638	28.19	176	7.7	29	1.3	10,077	8.55	
7. Rubber products (Mfg.).....	2,875	1,624	56.48	490	17.0	35	1.2	28,829	19.26	
8. Tobacco, cigars, and cigarettes (Mfg.).....	2,940	1,317	44.70	319	10.8	43	1.5	24,419	15.92	
9. Silk, silk goods (including artificial silk) (Mfg.).....	3,071	852	27.74	218	7.0	27	0.8	14,634	9.15	
10. Men's clothing—suits, coats (Mfg.).....	3,215	1,839	57.20	1,026	31.9	47	1.5	42,555	25.44	
11. Women's clothing—skirts, cloaks, waists (including children's wear) (Mfg.).....	2,048	874	42.67	384	18.7	17	0.8	16,701	15.67	
12. Furniture (including upholstering) (Mfg.).....	2,748	1,216	44.25	358	14.1	50	1.9	22,690	15.88	
13. Boilers, engines, and machinery (Mfg.).....	4,676	1,070	35.71	603	14.1	72	1.5	33,096	13.69	
14. Iron smelting, converting, refining, rolling (Mfg.).....	3,570	1,766	49.38	679	18.9	46	1.2	38,764	20.84	
15. Electrical apparatus (Mfg.).....	4,250	1,355	31.83	534	12.5	39	0.9	24,414	11.01	
16. Electric light and power production and distribution.....	4,891	1,135	23.20	466	9.5	69	1.4	21,445	8.42	
17. Shipbuilding.....	2,696	1,406	52.15	594	22.0	48	1.6	29,096	20.75	
18. Cartage, trucking, and haulage service.....	5,643	2,594	45.96	1,020	18.0	94	1.6	58,150	19.80	
19. Electric railways.....	4,823	1,299	26.93	305	6.3	35	0.7	20,963	8.34	
20. Taxicabs, livery, and bus service.....	4,044	1,495	36.96	622	15.3	67	1.6	32,955	15.06	
21. Telephone systems.....	2,609	652	24.23	260	9.8	36	1.3	10,137	7.22	
22. Coal and wood (Retail Trade).....	2,453	1,072	43.70	306	10.1	35	1.4	22,509	17.63	
23. Dairy products (Retail Trade).....	2,368	481	20.31	149	6.2	27	1.1	10,114	8.21	
24. General and departmental (Retail Trade).....	5,318	1,149	21.60	517	9.7	47	0.9	24,284	8.76	

¹ Includes "strike or lockout" and "other" causes, i.e., all causes not inherent in the industry.

XLIX.—SELECTED SAMPLE OF 122 INDUSTRIES IN THE NINE PROVINCES, SHOWING MALE WAGE-EARNERS, NUMBER AND PERCENTAGE LOSING TIME, NUMBER AND PERCENTAGE NOT AT WORK JUNE 1 BY CAUSE, TOTAL WEEKS LOST AND AVERAGE PERCENTAGE OF YEAR LOST PER WAGE-EARNER, CANADA, YEAR ENDED JUNE 1, 1931—Cont.

Province and Industry	Male Wage-Earners							Weeks Lost during Year Ended June 1, 1931 from All Causes	Average Weeks Lost per Wage- Earner, as P.C. of 52		
	Total	Losing Time during Year		Not at Work June 1, Due to							
		No.	P.C.	All Causes		Sickness, Accident, etc.					
				No.	P.C.	No.	P.C.	No.	P.C.		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)		
Quebec—Con.											
25. Hardware and builders' supplies (Retail Trade).....	2,455	534	21.75	201	8.1	22	0.9	11,327	8.55		
26. Meat, poultry, and fish (Retail Trade).....	4,510	1,329	29.42	555	12.2	79	1.7	28,222	12.00		
27. Investment and loan.....	2,997	434	14.48	277	9.2	21	0.7	11,820	7.57		
28. Banking.....	5,933	411	6.92	242	4.0	48	0.8	10,063	3.25		
29. Education.....	5,843	364	6.22	128	2.1	29	0.5	7,732	2.53		
30. Health.....	2,283	336	14.71	114	4.9	28	1.2	6,331	5.32		
31. Religion.....	4,114	119	2.89	32	0.7	7	0.1	2,303	2.13		
32. Postal service.....	3,492	235	6.81	93	2.6	31	0.9	3,904	2.07		
33. Police (Municipal).....	2,285	158	6.91	59	2.5	22	0.9	2,457	19.17		
34. Automobile repair service.....	2,463	1,104	44.82	440	17.8	38	1.5	24,551	11.76		
35. Barber and hairdressing shops.....	2,133	583	27.33	250	11.7	40	1.9	13,064	11.75		
36. Private domestic service.....	4,335	1,089	25.12	427	9.8	20	0.7	26,523			
Ontario—											
1. Gardening—truck farming.....	3,200	1,534	47.93	426	13.3	25	0.8	39,997	24.01		
2. Nickel-copper mining and milling.....	2,497	801	36.08	404	16.1	27	1.1	19,274	14.32		
3. Quarries, gravel pits, salt wells.....	2,806	1,763	63.03	455	16.2	39	1.4	38,888	26.65		
4. Biscuits and confectionery (Mfg.).....	2,725	952	34.93	281	10.2	34	1.2	18,376	12.96		
5. Flour and grain milling (Mfg.).....	2,523	725	28.73	237	8.9	33	1.3	13,044	9.94		
6. Liquors, beverages (not aerated waters) (Mfg.).....	2,795	1,037	37.10	315	11.2	26	0.9	21,435	14.73		
7. Butter, cheese, and condensed milk (Mfg.).....	2,992	765	25.56	194	5.4	27	0.9	14,105	9.05		
8. Slaughtering and meat packing (Mfg.).....	3,365	1,291	38.33	457	11.4	39	1.0	26,039	12.63		
9. Boots and shoes (Mfg.).....	3,313	1,736	52.39	494	14.8	38	1.1	33,226	19.26		
10. Tanning (Mfg.).....	2,312	1,085	46.92	235	10.1	29	1.2	18,425	15.30		
11. Cotton goods—yarn, cloth, thread (Mfg.).....	2,717	1,004	36.93	369	13.5	36	1.3	31,965	22.61		
12. Hosiery and knitted goods (Mfg.).....	2,721	1,220	44.83	318	11.6	29	1.0	22,775	16.09		
13. Woollens and worsteds (Mfg.).....	3,056	1,022	33.45	352	11.5	37	1.2	28,538	17.04		
14. Women's clothing—skirts, cloaks, waists (including children's wear) (Mfg.).....	2,136	1,356	63.48	663	31.0	27	1.3	30,725	27.05		
15. Paper products—boxes, bags, stationery (Mfg.).....	2,389	915	38.22	297	10.4	32	1.1	17,164	11.61		
16. Agricultural implements and machinery (Mfg.).....	5,154	3,533	68.54	1,849	35.8	68	1.3	103,908	38.75		
17. Hardware and tools (Mfg.).....	3,510	1,977	56.32	607	17.2	53	1.5	39,962	21.88		
18. Sheet metal products (Mfg.).....	2,344	1,187	50.63	414	17.6	24	1.0	25,591	20.98		
19. Wire and wire goods (Mfg.).....	2,578	1,424	55.23	527	20.4	36	1.4	29,476	21.98		
20. Brass and copper products (Mfg.).....	2,729	1,351	49.50	443	16.2	31	1.2	27,817	19.59		
21. Non-ferrous smelting and refining (Mfg.).....	2,941	945	32.13	378	12.8	31	1.1	20,579	13.63		
22. Bricks and tile (Mfg.).....	2,104	1,274	60.55	391	18.5	21	1.0	29,223	26.69		
23. Glass and its products (Mfg.).....	2,012	1,136	56.46	358	17.7	22	1.1	26,539	25.35		
24. Illuminating and fuel gas (Mfg.).....	2,366	665	28.10	158	7.8	25	1.0	13,759	11.17		
25. Petroleum products (Mfg.).....	2,877	1,235	43.02	408	14.1	42	1.4	16,760	11.19		
26. Electric railways.....	4,361	1,481	33.94	549	12.6	59	1.5	22,456	7.36		
27. Storage.....	3,237	1,178	36.39	410	12.6	27	0.8	24,686	14.65		
28. Taxicabs, livery, and bus service.....	2,587	1,038	40.12	339	16.9	22	0.8	25,456	18.90		
29. Telephone systems.....	2,741	611	22.29	324	11.8	22	0.8	12,701	8.90		
30. Telegraph systems.....	4,344	1,115	25.66	445	10.2	29	0.7	19,418	8.59		
31. Automobiles and accessories (Retail Trade).....	3,484	844	24.22	305	8.7	27	0.8	18,949	10.44		
32. Coal and wood (Retail Trade).....	3,252	1,420	43.66	660	20.2	44	1.3	27,936	16.51		
33. Dairy products (Retail Trade).....	5,106	1,165	22.81	337	6.6	49	1.0	22,399	8.42		
34. Drugs and toilet preparations (Retail Trade).....	2,555	537	21.01	265	10.3	25	1.0	13,131	9.89		
35. Filling stations (Retail Trade).....	2,257	740	32.78	199	8.8	15	0.7	16,295	13.86		
36. Hardware and builders' supplies (Retail Trade).....	3,624	945	26.07	355	9.7	40	1.1	19,555	10.42		
37. Meat, poultry, and fish (Retail Trade).....	4,887	1,560	32.05	640	13.0	61	1.0	36,035	14.23		
38. Investment and loan.....	4,394	384	8.74	543	12.3	29	0.7	25,323	11.09		
39. Health.....	4,065	671	16.42	226	5.5	44	1.1	13,587	6.38		
40. Religion.....	5,392	154	2.85	77	1.4	31	0.6	3,411	1.21		
41. National defence.....	2,528	135	5.34	68	2.2	12	0.4	2,475	1.85		
42. Police (Municipal).....	2,454	137	5.58	34	1.3	9	0.3	2,387	1.85		
43. Billiard halls and sporting clubs.....	3,297	1,581	47.95	387	11.7	27	0.8	38,239	22.23		
44. Automobile repair service.....	4,457	2,044	45.86	807	18.1	60	1.2	48,706	21.00		
45. Laundries; laundering.....	2,493	477	19.14	214	8.6	15	0.7	11,379	9.15		
46. Barber and hairdressing shops.....	2,553	741	29.02	334	13.1	40	1.6	17,879	13.53		
47. Lodging and boarding houses.....	2,249	527	23.43	213	9.4	30	1.3	12,616	10.76		
48. Private domestic service.....	4,389	1,348	30.71	461	10.5	41	1.0	31,808	13.92		

XLIX.—SELECTED SAMPLE OF 122 INDUSTRIES IN THE NINE PROVINCES, SHOWING MALE WAGE-EARNERS, NUMBER AND PERCENTAGE LOSING TIME, NUMBER AND PERCENTAGE NOT AT WORK JUNE 1 BY CAUSE, TOTAL WEEKS LOST AND AVERAGE PERCENTAGE OF YEAR LOST PER WAGE-EARNER, CANADA, YEAR ENDED JUNE 1, 1931—Con.

Province and Industry	Male Wage-Earners							Weeks Lost during Year Ended June 1, 1931 from All Causes	Average Weeks Lost per Wage-Earner, as P.C. of 52
	Total	Losing Time during Year		Not at Work June 1, Due to					
		No.	P.C.	All Causes		Sickness, Accident, etc. ¹			
				No.	P.C.	No.	P.C.		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Manitoba—									
1. Printing, publishing, and bookbinding.....	2,145	530	24.70	251	11.7	28	1.4	11,200	10.03
2. General and departmental (Retail Trade).....	3,935	1,270	32.02	509	12.7	52	1.3	23,251	11.21
3. Education.....	2,041	172	8.42	96	4.7	24	1.2	4,350	4.09
4. Hotels, restaurants, and taverns.....	2,741	1,059	38.63	588	21.4	32	1.2	28,715	20.13
Saskatchewan—									
1. Building and structures.....	5,010	3,828	76.31	2,539	50.6	72	1.5	113,235	43.40
2. Storage.....	2,962	429	14.48	278	9.3	11	0.3	7,818	5.06
3. Education.....	3,169	329	10.38	182	5.7	18	0.6	7,732	4.67
4. Hotels, restaurants, and taverns.....	2,235	609	27.24	388	17.3	15	0.7	16,909	14.53
Alberta—									
1. Grain growing.....	2,112	1,002	47.44	337	15.9	13	0.6	24,959	22.71
2. Building and structures.....	5,139	4,004	77.91	2,501	48.6	69	1.3	115,225	43.11
3. Education.....	2,420	194	8.01	100	4.1	13	0.6	4,357	3.46
4. Hotels, restaurants, and taverns.....	3,792	1,535	40.47	603	15.9	17	0.5	38,922	19.73
British Columbia—									
1. Gardening—truck farming.....	2,136	1,054	49.34	413	19.3	17	0.8	30,989	27.58
2. Mixed and general farming.....	5,991	3,289	54.89	1,833	30.5	56	0.9	92,300	29.61
3. Fishing.....	3,029	2,018	66.62	1,651	54.5	32	1.1	55,127	34.98
4. Coal mining.....	4,822	3,906	81.00	2,111	43.7	137	2.5	97,425	38.84
5. Fish curing and packing (Mfg.).....	3,000	2,120	70.66	1,439	47.9	8	0.2	65,726	42.11
6. Pulp and paper (Mfg.).....	2,842	747	26.28	193	6.7	38	1.3	10,898	7.36
7. Printing, publishing, and bookbinding.....	2,099	555	26.45	288	13.7	20	1.3	13,034	11.94
8. Non-ferrous smelting and refining (Mfg.).....	3,256	1,144	35.13	144	4.4	36	1.1	13,389	7.90
9. Electric railways.....	2,203	430	19.51	149	6.7	29	1.3	7,668	6.69
10. General and departmental (Retail Trade).....	2,339	578	24.71	287	12.2	22	0.9	13,269	10.90
11. Education.....	2,151	200	9.29	92	4.2	12	0.5	4,031	4.13
12. Hotels, restaurants, and taverns.....	5,589	1,887	32.04	1,122	19.0	38	0.6	62,512	17.13
Total (122 groups).....	410,490	149,579	36.44	62,955	15.3	4,971	1.2	3,326,934	15.68

Distribution of Unemployment among Industries.—A certain feature of unemployment in industries which should be examined before going on with detailed analysis (since it is basic to the type of measurement we apply in such analysis) is the nature or type of the distribution of unemployment among industries. It makes a great deal of difference whether the unemployment in an industry stands on its own feet as it were, or is related to that of the whole; if the latter, the manner in which it is related is important. While it is practically impossible that anything of this nature stand on its own feet, yet because of a loose way of thinking, we are apt to speak of unemployment in an industry as being entirely connected with or dependent upon that industry. The practical impossibility of this is at once apparent when we remember that for every day lost to an industry some *person*—who is a part of the population, not of the industry—must lose a day. He would be less likely to lose that day if all other industries were so situated that they could employ him. Of course, in addition to this consideration, there is a certain dependency on the part of an industry upon the whole. Consequently the manner in which the unemployment in different industries is related to the whole is a very important feature to ascertain as a guide to further analysis.

In Statement L is shown the unemployment (June 1) in each industry in order of size from the highest to the lowest. The data (for reasons to be explained later) are in the form of an index referred to unemployment in all industries in all Canada as base. It will be seen in the statement that the industries with average or near-average unemployment are far more numerous than those with extreme unemployment, whether high or low. If there is a law to this effect—and there would seem to be—it is that there is a central tendency in unemployment as distributed among

industries. It should be noted that this is not the law of the distribution of unemployment among persons, for a large number—usually the majority—of wage-earners report no time lost during the year or on June 1. If the unemployment in one industry is thus related to the unemployment in all industries we have another double phenomenon to allow for when comparing one industry with another. A certain industry A loses time because of, or in sympathy with, the loss of time in industry B and to that extent it is not responsible for that loss of time. In consequence it is clear that in comparing industries a better figure must be devised than the absolute amount of unemployment shown by each industry. For this reason Statement L shows the unemployment in each industry as an index with this central point, *viz.*, unemployment in all Canada, as base. Statement LI shows the arrangement of these indices around the mean. In order to analyse this central tendency of unemployment, it must be reviewed from three angles. First, the distribution of the time lost by the industry; secondly, the distribution of the percentage of wage-earners in the industry who lost time, and thirdly, the distribution of the time lost by those who lost time in the industry. In each of these three criteria of unemployment it can be seen that there is a pronounced central tendency. However, it is important to notice the differences which exist.

L.—INDUSTRY GROUPS IN THE NINE PROVINCES HAVING 2,000-6,000 MALE WAGE-EARNERS, INDEXED TO SHOW RELATION OF THE INDIVIDUAL GROUPS TO INDUSTRY IN CANADA AS A WHOLE, WITH REGARD TO FACTORS EXPECTED TO INFLUENCE AMOUNT OF UNEMPLOYMENT IN THESE GROUPS, CANADA, 1931

Province	Industry	Index 1	Index 6	Index 10	Index 11	Index 2	Index 3	Index 4	Index 5	Index 7	Index 8	Index 9
		Unemployment June 1	Income-partners	Yearly Unemployment	Composite of 1, 6 and 10	Age Liability to Unemployment	Bias of June 1	Locality	Female Content	Juvenile Content	Earnings	Degree of Eradication of Independent Worker
B.C.	Fishing.....	262	151	170	197	99	155	109	3	66	71	62
Sask.	Building and structures.....	243	173	211	211	103	116	114	2	44	90	114
Alta.	Building and structures.....	234	177	210	209	102	112	114	3	47	102	119
Que.	Asbestos mining.....	233	173	149	180	99	157	85	4	89	92	100
B.C.	Fish curing and packing (Mfg.).....	230	160	205	200	107	113	114	73	46	84	159
N.B.	Forestry and logging.....	213	169	166	183	101	130	92	2	120	47	153
P.C.	Coal mining.....	210	184	189	195	98	112	106	1	59	102	161
Ont.	Agricultural implements and machinery (Mfg.).....	172	156	189	173	96	92	105	20	32	114	160
N.S.	Iron smelting, converting, refining, rolling (Mfg.).....	166	181	182	179	92	92	86	10	41	107	161
Que.	Men's clothing—suits, coats (Mfg.).....	153	130	124	135	98	125	99	204	138	100	153
Ont.	Women's clothing—skirts, blouses, waists (including children's wear) (Mfg.).....	149	144	135	143	100	112	105	299	119	117	146
B.C.	Mixed and general farming.....	147	125	144	139	99	103	107	8	137	45	40
N.B.	Sawmill products (Mfg.).....	137	165	156	152	102	89	92	5	120	62	154
N.S.	Forestry and logging.....	130	104	83	108	101	165	86	5	118	42	147
N.S.	Building and structures.....	135	149	138	140	105	100	90	3	56	80	120
N.B.	Building and structures.....	124	145	132	133	104	95	95	3	60	79	123
N.S.	Water transportation.....	113	102	94	103	100	122	91	5	35	91	157
Que.	Shipbuilding.....	106	118	101	107	99	106	90	2	74	98	161
Man.	Hotels, restaurants, and taverns.....	103	88	98	96	98	106	126	205	55	78	128

Index 1. Percentage of male wage-earners not at work June 1 (percentage of male wage-earners not at work June 1 in all Canada as base).

Index 2. Index of age liability to unemployment derived from percentage of male wage-earners unemployed in age groups in industry weighted by number of male wage-earners in the age groups in all Canada and referred to all Canada liability as base.

Index 3. Index of seasonality to show ratio of percentage of male wage-earners not at work June 1 to the percentage of time lost during the year preceding the above date and referred to the same ratio for all Canada as base.

Index 4. Index showing effect of locality on unemployment derived from the percentage of unskilled male workers unemployed June 1 by zones, weighted by the number of male wage-earners in the industry in the corresponding zones and referred to the percentage of unemployed male unskilled workers for all Canada as base.

Index 5. Index to show percentage female of all wage-earners in the industry group, referred to percentage female of all wage-earners in all Canada as base.

Index 6. Index showing percentage of male wage-earners who lost any time (*i.e.* one week or more) during the year preceding June 1, 1931 in the industry group, referred to the percentage of male wage-earners losing any time for all Canada as base.

Index 7. Index showing percentage of male wage-earners in the industry group who are under 20 years of age, referred to percentage of male wage-earners under 20 in all Canada as base.

Index 8. Index showing the average earnings per week worked of the male wage-earners in the industry group, referred to the average weekly earnings of the male wage-earners for all industries in all Canada as base.

Index 9. Index showing percentage of all gainfully occupied males who are wage-earners in the industry group, referred to percentage of all gainfully occupied who are wage-earners for all industries in all Canada as base.

Index 10. Index showing the average number of weeks lost per wage-earner during the year, expressed as a percentage of 52 weeks and referred to the same for all Canada as base.

Index 11. Composite index of unemployment formed by combining 1, 6 and 10 and obtaining the average, each index being weighted by the extent of the square of its correlation with the data.

Base in every case=100.

L.—INDUSTRY GROUPS IN THE NINE PROVINCES HAVING 2,000-5,000 MALE WAGE-EARNERS, INDEXED TO SHOW RELATION OF THE INDIVIDUAL GROUPS TO INDUSTRY IN CANADA AS A WHOLE, WITH REGARD TO FACTORS EXPECTED TO INFLUENCE AMOUNT OF UNEMPLOYMENT IN THESE GROUPS, CANADA, 1931—Con.

Province	Industry	Index 1 Unemployment June 1	Index 6 Income-pact-ness	Index 10 Yearly Unemployment	Index 11 Composite of 1, 6 and 10	Index 2 Age Liability to Unemployment	Index 3 Bias of June 1	Index 4 Local-ity	Index 5 Female Content	Index 7 Juv-en-ile Content	Index 8 Earnings	Index 9 Degree of Em-ploy-ment of Independent Worker
Que.	Quarries, gravel pits; salt wells.....	101	128	113	112	100	90	89	1	102	81	157
N.B.	Pulp and paper (Mfg.).....	100	116	101	105	98	100	92	15	72	102	161
Ont.	Wire and wire goods (Mfg.).....	98	125	107	109	101	92	113	49	129	109	150
Ont.	Coal and wood (Retail Trade).....	97	99	80	93	97	122	102	47	43	100	121
B.C.	Gardening—truck farming.....	93	112	130	114	116	69	109	7	29	48	81
B.C.	Hotels, restaurants, and taverns.....	91	73	83	83	102	110	118	144	40	75	134
Que.	Iron smelting, converting, re-fining, rolling (Mfg.).....	91	112	101	101	99	90	99	25	53	117	161
Que.	Women's clothing—skirts, blouses, waists (including children's wear) (Mfg.).....	90	97	76	87	94	119	98	350	199	109	144
Ont.	Bricks and tile (Mfg.).....	89	138	130	118	100	69	100	13	72	92	158
Ont.	Automobile repair service.....	87	104	102	98	97	86	102	9	116	94	110
Que.	Cartage, trucking, and haul-age service.....	86	104	96	95	97	90	96	3	81	81	115
Que.	Automobile repair service.....	85	102	93	93	103	92	90	4	141	02	123
Ont.	Sheet metal products (Mfg.).....	85	115	102	100	98	83	104	60	91	111	158
Ont.	Glass and its products (Mfg.).....	85	123	124	111	100	69	106	30	115	108	156
Ont.	Hardware and tools (Mfg.).....	83	128	107	104	99	78	103	47	100	106	157
Sask.	Hotels, restaurants, and taverns.....	83	62	71	73	102	119	110	190	51	50	93
Que.	Rubber products (Mfg.).....	82	128	94	99	113	88	92	151	155	94	161
Ont.	Taxicabs, livery, and bus service.....	81	91	92	87	112	89	104	13	62	87	110
Ont.	Quarries, gravel pits; salt wells.....	78	143	130	115	97	60	99	6	53	91	158
Que.	Brass and copper products (Mfg.).....	78	112	95	94	100	82	101	42	76	107	158
Que.	Coal and wood (Retail Trade).....	77	99	86	87	99	91	97	25	74	99	117
Ont.	Nickel-copper mining and milling.....	77	82	72	77	95	108	97	2	42	122	161
Alta.	Grain growing.....	76	108	111	97	92	70	89	2	125	36	51
Alta.	Hotels, restaurants, and taverns.....	76	92	96	87	101	80	106	105	56	82	110
N.B.	Mixed and general farming.....	75	87	75	79	97	101	92	2	242	33	29
Que.	Taxicabs, livery, and bus service.....	73	84	76	77	100	97	97	4	40	81	117
Ont.	Boots and shoes (Mfg.).....	71	119	94	93	102	76	99	150	173	94	158
Que.	Furniture (including upholstery) (Mfg.).....	68	100	77	81	100	88	94	21	131	91	150
Que.	Boilers, engines, and machinery (Mfg.).....	68	81	66	71	91	103	95	29	63	124	157
Ont.	Petroleum products (Mfg.).....	68	99	54	73	94	126	100	29	28	142	160
B.C.	Printing, publishing, and bookbinding.....	66	60	58	62	100	114	118	68	170	132	146
Ont.	Cotton goods—yarn, cloth, thread (Mfg.).....	65	134	110	101	103	55	104	197	216	86	160
Ont.	Gardening—truck farming.....	64	109	117	96	104	55	99	5	152	57	53
Ont.	Meat, poultry, and fish (Retail Trade).....	63	73	69	68	91	92	103	21	209	81	102
Ont.	Barber and hairdressing shops.....	63	66	66	64	95	96	104	153	66	87	66
Man.	General and departmental (Retail Trade).....	61	73	55	62	100	113	126	247	108	131	128
Ont.	Non-ferrous smelting and re-fining (Mfg.).....	61	73	66	66	104	93	97	4	42	122	161
Que.	Electrical apparatus (Mfg.).....	60	72	54	62	107	113	102	104	97	133	160
Que.	Storage.....	60	83	71	71	90	86	100	20	47	124	159
B.C.	General and departmental (Retail Trade).....	59	56	53	56	100	111	116	244	149	111	119
Ont.	Investment and loan.....	59	46	54	53	105	110	105	141	81	181	138
Que.	Meat, poultry, and fish (Retail Trade).....	58	67	58	61	92	101	97	22	247	78	100
Ont.	Telegraph systems.....	57	51	43	50	103	132	101	58	170	125	161
Que.	Barber and hairdressing shops.....	56	62	57	58	93	100	96	146	81	78	73
Ont.	Hosiery and knitted goods (Mfg.).....	56	102	78	78	108	79	104	288	197	111	167
Ont.	Billiard halls and sporting clubs.....	56	109	109	90	100	53	101	60	131	102	133
Man.	Printing, publishing, and bookbinding.....	56	56	49	54	103	116	129	100	152	139	149
Ont.	Slaughtering and meat packing (Mfg.).....	55	73	61	62	98	90	103	41	53	117	158
Ont.	Woolless and worsteds (Mfg.).....	55	121	87	86	103	64	99	210	147	95	157

L.—INDUSTRY GROUPS IN THE NINE PROVINCES HAVING 2,000-6,000 MALE WAGE-EARNERS, INDEXED TO SHOW RELATION OF THE INDIVIDUAL GROUPS TO INDUSTRY IN CANADA AS A WHOLE, WITH REGARD TO FACTORS EXPECTED TO INFLUENCE AMOUNT OF UNEMPLOYMENT IN THESE GROUPS, CANADA, 1931—Con.

Province	Industry	Index 1 Unem- p- ment June 1	Index 6 Incom- pact- ness	Index 10 Yearly Unem- p- ment	Index 11 Compo- site of 1, 6 and 10	Index 2 Age Li- ability to Unem- p- ment	Index 3 Bias of June 1	Index 4 Local- ity	Index 5 Female Con- tent	Index 7 Juve- nile Con- tent	Index 8 Earn- ings	Index 9 Degree of Educa- tion of Indep- endent Worker
Ont.	Liquors, beverages (not aerated waters) (Mfg.)	54	85	72	78	96	76	104	44	41	134	157
Que.	Bread and other bakery products (Mfg.)	53	83	56	57	102	96	96	20	182	80	128
N.S.	Steam railways	52	71	52	58	79	102	89	10	24	121	161
Que.	Biscuits and confectionery (Mfg.)	52	81	65	65	113	81	99	186	231	97	154
Que.	Tobacco, cigars, and cigarettes (Mfg.)	52	101	78	75	102	67	96	245	141	104	158
N.S.	Mixed and general farming	51	66	52	56	100	100	86	3	236	34	22
N.S.	Fishing	50	73	62	61	100	82	87	2	159	44	39
Ont.	Paper products—boxes, bags, stationery (Mfg.)	50	73	57	59	103	89	103	185	135	130	155
Ont.	Private domestic service	50	70	68	62	97	75	101	427	74	77	158
Ont.	Biscuits and confectionery (Mfg.)	49	79	73	67	103	78	102	221	142	117	153
Ont.	Telephone systems	49	58	42	50	107	118	108	281	43	145	161
Ont.	Drugs and toilet preparations (Retail Trade)	49	48	48	49	90	104	104	92	319	99	108
Ont.	Tanning (Mfg.)	48	107	75	75	101	60	98	32	79	90	158
Que.	Telephone systems	47	55	35	40	109	135	98	275	49	155	161
Que.	General and departmental (Retail Trade)	47	49	43	47	106	110	95	230	177	98	97
Que.	Private domestic service	47	57	57	53	102	83	93	425	125	70	133
Ont.	Hardware and builders' supplies (Retail Trade)	47	59	51	52	100	93	101	71	118	102	105
Que.	Electric light and power production and distribution	46	53	41	47	97	112	93	35	54	141	161
N.B.	Steam railways	45	60	42	40	78	107	93	16	29	124	161
Ont.	Lodging and boarding houses	45	53	52	50	103	87	106	139	22	83	127
Sask.	Storage	45	33	25	36	67	194	105	6	8	126	160
Que.	Investment and loan	44	33	37	38	105	121	98	133	170	167	133
Ont.	Flour and grain milling	43	68	48	52	97	89	99	31	42	107	129
Ont.	Automobiles and accessories (Retail Trade)	42	55	51	49	93	83	108	48	30	139	124
Ont.	Filling stations (Retail Trade)	42	74	67	60	111	63	108	11	176	90	115
Ont.	Laundries; laundering	41	43	45	44	101	93	105	191	52	81	104
Que.	Hardware and builders' supplies (Retail Trade)	39	49	43	44	100	91	96	54	191	95	120
Que.	Dairy farming	37	37	34	36	87	113	88	6	287	28	15
Que.	Liquors, beverages (not aerated waters) (Mfg.)	37	64	42	47	95	90	99	40	63	124	158
Ont.	Illuminating and fuel gas	37	64	54	51	96	99	105	43	29	123	161
Que.	Silk, silk goods (including artificial silk) (Mfg.)	34	69	45	47	113	76	87	207	229	91	160
Ont.	Dairy products (Retail Trade)	32	52	41	41	97	78	103	37	73	108	147
B.C.	Pulp and paper (Mfg.)	32	60	36	42	95	91	107	13	53	126	161
B.C.	Electric railways	32	44	35	36	75	100	119	29	15	133	161
Que.	Electric railways	30	61	41	43	73	76	100	13	17	118	161
Que.	Dairy products (Retail Trade)	30	46	40	38	103	75	99	21	133	100	126
Ont.	Electric railways	28	57	36	39	83	80	105	12	11	121	161
Sask.	Education	27	23	23	24	105	122	107	307	24	120	157
Ont.	Butter, cheese, and condensed milk (Mfg.)	26	53	44	41	100	59	98	44	101	89	139
Ont.	Health	26	37	31	30	100	86	101	342	37	98	67
Que.	Health	22	33	26	27	102	92	96	331	94	93	65
Man.	Education	22	19	20	21	88	114	117	320	22	131	155
B.C.	Non-ferrous smelting and refining (Mfg.)	21	80	38	44	93	55	106	8	45	134	161
Alta.	Education	20	18	17	19	91	118	100	306	28	133	156
B.C.	Education	20	21	20	21	84	101	114	208	14	154	156
Que.	Banking	19	19	16	17	117	123	94	108	102	127	161
P.E.I.	Mixed and general farming	14	26	18	19	83	77	58	2	278	28	19
Que.	Postal service	12	15	10	13	86	122	94	86	38	111	161
Que.	Police (Municipal)	12	16	10	13	86	120	98	3	3	136	161
Que.	Education	10	14	12	13	100	83	93	338	61	105	111
Ont.	National defence	10	12	9	10	91	118	97	14	92	115	161
Ont.	Religion	7	8	6	8	60	115	100	63	3	133	148
Ont.	Police (Municipal)	6	13	9	9	65	69	104	11	3	151	161
Que.	Religion	3	6	5	4	63	64	89	56	20	86	115
Total		8,776	10,121	9,184	9,331	11,891	11,774	12,240	11,110	11,837	12,321	10,253
Mean		72	83	75	76	97	97	100	91	97	101	133

LI.—NORMALITY OF DISTRIBUTION OF UNEMPLOYMENT IN THE 122 SELECTED INDUSTRIES OF THE SAMPLE, AS INDICATED BY INDICES OF THE THREE CRITERIA (1) AVERAGE TIME LOST BY ALL WAGE-EARNERS, (2) PERCENTAGE OF ALL WAGE-EARNERS LOSING TIME AND (3) AVERAGE TIME LOST BY WAGE-EARNERS LOSING TIME, ARRANGED AROUND THE MEAN, CANADA, YEAR ENDED JUNE 1, 1931

(1) Average Time Lost by All Male Wage-Earners (Index 10, Statement L)				(2) Percentage of All Male Wage-Earners Losing Time ¹ (Index 8, Statement L)				(3) Average Time Lost by Male Wage- Earners Losing Time ¹ (Index 10) (Index 6)			
No.	Province	Industry	Index	No.	Industry	Index	No.	Industry	Index		
1	Que.	Religion.....	5	1	Religion.....	6	23	Non-ferrous smelting and refining (Mfg.).....	48		
2	Ont.	Religion.....	6	2	Religion.....	6	49	Petroleum products (Mfg.).....	55		
3	Ont.	Police (Municipal).....	9	3	National defence.....	12	21	Pulp and paper (Mfg.).....	60		
4	Ont.	National defence.....	9	4	Police (Municipal).....	13	5	Police (Municipal).....	63		
5	Que.	Police (Municipal).....	10	7	Education.....	14	20	Electric railways.....	63		
6	Que.	Postal service.....	10	6	Postal service.....	15	15	Telephone systems.....	64		
7	Que.	Education.....	12	5	Police (Municipal).....	15	20	Liquors, beverages (not aerated waters) (Mfg.).....	64		
8	Que.	Banking.....	16	8	Banking.....	16	19	Liquors, beverages (not aerated waters) (Mfg.).....	66		
9	Alta.	Education.....	17	9	Education.....	18	28	Religion.....	67		
10	P.E.I.	Mixed and general farm- ing.....	18	12	Education.....	19	3	Postal service.....	67		
11	B.C.	Education.....	20	11	Education.....	21	25	Police (Municipal).....	69		
12	Man.	Education.....	20	13	Education.....	23	29	Steam railways.....	70		
13	Sask.	Education.....	20	10	Mixed and general farming	25	71	Tanning (Mfg.).....	70		
14	Sask.	Storage.....	25	15	Health.....	33	35	Silk, silk goods (including artificial silk) (Mfg.).....	71		
15	Que.	Health.....	26	22	Investment and loan.....	33	10	Mixed and general farm- ing.....	72		
16	Ont.	Health.....	31	14	Storage.....	33	30	Telephone systems.....	72		
17	B.C.	Electric railways.....	33	18	Health.....	37	82	Woolens and worsteds (Mfg.).....	72		
18	Que.	Dairy farming.....	34	36	Dairy farming.....	37	44	Steam railways.....	73		
19	Que.	Telephone systems.....	35	38	Laundries; laundering.....	43	49	Rubber products (Mfg.).....	73		
20	Ont.	Electric railways.....	36	24	Electric railways.....	44	37	Flour and grain milling.....	74		
21	B.C.	Pulp and paper (Mfg.).....	36	24	Dairy products (Retail Trade).....	46	4	National defence.....	75		
22	Que.	Investment and loan.....	37	46	Laundries; laundering.....	46	17	Electric railways.....	75		
23	B.C.	Non-ferrous smelting and refining (Mfg.).....	37	38	Drugs and toilet prepara- tions (Retail Trade).....	46	48	Electrical apparatus (Mfg.).....	75		
24	Que.	Dairy products (Retail Trade).....	40	31	Hardware and builders' supplies (Retail Trade).....	48	50	General and departmen- tal (Retail Trade).....	75		
25	Que.	Electric railways.....	41	32	General and departmen- tal (Retail Trade).....	49	34	Butter, cheese, and con- densed milk (Mfg.).....	76		
26	Ont.	Dairy products (Retail Trade).....	41	36	Telegraph systems.....	51	14	Storage.....	76		
27	Que.	Electric light and power production and distri- bution.....	41	26	Dairy products (Retail Trade).....	52	77	Hosiery and knitted goods (Mfg.).....	76		
28	Que.	Liquors, beverages (not aerated waters) (Mfg.).....	42	42	Lodging and boarding houses.....	52	27	Electric light and power production and distri- bution.....	77		
29	N.B.	Steam railways.....	42	27	Electric light and power production and distri- bution.....	53	76	Tobacco, cigars, and cigarettes (Mfg.).....	77		
30	Ont.	Telephone systems.....	42	40	Automobiles and acces- sories (Retail Trade).....	55	75	Furniture (including up- holstering) (Mfg.).....	77		
31	Que.	Hardware and builders' supplies (Retail Trade).....	43	19	Telephone systems.....	55	53	Paper products—boxes, bags, stationery (Mfg.).....	78		
32	Que.	General and departmen- tal (Retail Trade).....	43	39	Printing, publishing, and bookbinding.....	56	74	Women's clothing— skirts, coats, waists (including children's wear) (Mfg.).....	78		
33	Ont.	Telegraph systems.....	43	20	Electric railways.....	56	15	Health.....	79		
34	Ont.	Butter, cheese, and con- densed milk (Mfg.).....	44	52	Private domestic service.....	57	43	Mixed and general farm- ing.....	79		
35	Que.	Silk, silk goods (including artificial silk) (Mfg.).....	45	34	Butter, cheese, and con- densed milk (Mfg.).....	58	85	Boots and shoes (Mfg.).....	79		
36	Ont.	Laundries; laundering.....	45	30	Telephone systems.....	58	59	Biscuits and confection- ery (Mfg.).....	80		
37	Ont.	Flour and grain milling.....	48	41	Hardware and builders' supplies (Retail Trade).....	59	80	Forestry and logging.....	80		
38	Ont.	Drugs and toilet prepara- tions (Retail Trade).....	48	21	Pulp and paper (Mfg.).....	60	62	Boilers, engines, and machinery (Mfg.).....	81		
39	Man.	Printing, publishing, and bookbinding.....	49	26	Steam railways.....	60	78	Coal and wood (Retail Trade).....	81		
40	Ont.	Automobiles and acces- sories (Retail Trade).....	51	55	Printing, publishing, and bookbinding.....	61	100	Cotton goods—yarn, clothes, thread (Mfg.).....	82		
41	Ont.	Hardware and builders' supplies (Retail Trade).....	51	25	Electric railways.....	61	16	Health.....	84		
42	Ont.	Lodging and boarding houses.....	52	54	Barber and hairdressing shops.....	62	46	Illuminating and fuel gas (Mfg.).....	84		
43	N.S.	Mixed and general farm- ing.....	52	67	Hotels, restaurants, and taverns.....	65	57	Slaughtering and meat packing (Mfg.).....	84		
44	N.S.	Steam railways.....	52	35	Silk, silk goods (including artificial silk) (Mfg.).....	63	66	Telegraph systems.....	84		
45	B.C.	General and departmen- tal (Retail Trade).....	53	51	Bread and other bakery products (Mfg.).....	63	97	Hardware and tools (Mfg.).....	84		
46	Ont.	Illuminating and fuel gas (Mfg.).....	54	46	Illuminating and fuel gas (Mfg.).....	66	58	Fishing.....	85		
47	Ont.	Investment and loan.....	54	28	Liquors, beverages (not aerated waters) (Mfg.).....	64	88	Brass and copper prod- ucts (Mfg.).....	85		
48	Que.	Electrical apparatus (Mfg.).....	54	37	Flour and grain milling.....	65					
49	Ont.	Petroleum products (Mfg.).....	54	43	Mixed and general farm- ing.....	66					
50	Man.	General and departmen- tal (Retail Trade).....	55	61	Barber and hairdressing shops.....	66					
51	Que.	Bread and other bakery products (Mfg.).....	56	55	Meat, poultry, and fish (Retail Trade).....	70					
52	Que.	Private domestic service Paper products—boxes, bags, stationery (Mfg.).....	57	64	Private domestic service.....	70					
53	Ont.	Private domestic service Paper products—boxes, bags, stationery (Mfg.).....	57	44	Steam railways.....	71					

¹ i.e., one week or more.

LI.—NORMALITY OF DISTRIBUTION OF UNEMPLOYMENT IN THE 122 SELECTED INDUSTRIES OF THE SAMPLE, AS INDICATED BY INDICES OF THE THREE CRITERIA (1) AVERAGE TIME LOST BY ALL WAGE-EARNERS, (2) PERCENTAGE OF ALL WAGE-EARNERS LOSING TIME AND (3) AVERAGE TIME LOST BY WAGE-EARNERS LOSING TIME, ARRANGED AROUND THE MEAN, CANADA, YEAR ENDED JUNE 1, 1931—Con.

(1) Average Time Lost by All Male Wage-Earners (Index 10, Statement L)				(2) Percentage of All Male Wage-Earners Losing Time ¹ (Index 6, Statement L)			(3) Average Time Lost by Male Wage- Earners Losing Time ¹ (Index 10) (Index 6)		
No.	Province	Industry	Index	No.	Industry	Index	No.	Industry	Index
54	Que.	Barber and hairdressing shops.....	57	48	Electrical apparatus (Mfg.).....	72	7	Education.....	86
55	Que.	Meat, poultry, and fish (Retail Trade).....	58	53	Paper products—boxes, bags, stationery (Mfg.).....	73	41	Hardware and builders' supplies (Retail Trade).....	85
56	B.C.	Printing, publishing, and bookbinding.....	58	58	Fishing.....	73	62	Storage.....	85
57	Ont.	Slaughtering, meat packing (Mfg.).....	61	57	Slaughtering and meat packing (Mfg.).....	73	70	Mixed and general farming.....	86
58	N.S.	Fishing.....	62	00	Non-ferrous smelting and refining (Mfg.).....	73	98	Wire and wire goods (Mfg.).....	86
59	Que.	Biscuits and confectionery (Mfg.).....	65	50	General and departmental (Retail Trade).....	73	94	Shipbuilding.....	86
60	Ont.	Non-ferrous smelting and refining (Mfg.).....	66	65	Meat, poultry, and fish (Retail Trade).....	73	113	Asbestos mining.....	86
61	Ont.	Barber and hairdressing shops.....	66	70	Hotels, restaurants, and taverns.....	73	24	Dairy products (Retail Trade).....	87
62	Que.	Boilers, engines, and machinery (Mfg.).....	66	63	Filling stations (Retail Trade).....	74	55	Meat, poultry, and fish (Retail Trade).....	87
63	Ont.	Filling stations (Retail Trade).....	67	70	Biscuits and confectionery (Mfg.).....	79	81	Coal and wood (Retail Trade).....	87
64	Ont.	Private domestic service.....	68	23	Non-ferrous smelting and refining (Mfg.).....	80	93	Pulp and paper (Mfg.).....	87
65	Ont.	Meat, poultry, and fish (Retail Trade).....	69	50	Biscuits and confectionery (Mfg.).....	81	31	Hardware and builders' supplies (Retail Trade).....	88
66	Ont.	Storage.....	71	02	Boilers, engines, and machinery (Mfg.).....	81	32	General and departmental (Retail Trade).....	88
67	Sask.	Hotels, restaurants, and taverns.....	71	60	Nickel-copper mining and milling.....	82	39	Printing, publishing, and bookbinding.....	88
68	Ont.	Liquors, beverages (not aerated waters) (Mfg.).....	72	60	Storage.....	83		Mean	
69	Ont.	Nickel-copper mining and milling.....	72		Mean		60	Nickel-copper mining and milling.....	88
70	Ont.	Biscuits and confectionery (Mfg.).....	73	73	Taxicabs, livery, and bus service.....	84	102	Quarries, gravel pits; salt wells.....	88
71	Ont.	Tanning (Mfg.).....	75	68	Liquors, beverages (not aerated waters) (Mfg.).....	85	51	Bread and other bakery products (Mfg.).....	89
	Mean			91	Mixed and general farming.....	87	95	Sheet metal products.....	89
72	N.B.	Mixed and general farming.....	75	83	Hotels, restaurants, and taverns.....	88	60	Non-ferrous smelting and refining (Mfg.).....	90
73	Que.	Taxicabs, livery, and bus service.....	76	89	Hotels, restaurants, and taverns.....	91	73	Taxicabs, livery, and bus service.....	90
74	Que.	Women's clothing—skirts, cloaks, waists (including children's wear) (Mfg.).....	76	74	Women's clothing—skirts, cloaks, waists (including children's wear) (Mfg.).....	92	92	Iron smelting, converting, refining, rolling (Mfg.).....	90
75	Que.	Furniture (including upholstery) (Mfg.).....	77	49	Petroleum products (Mfg.).....	97	63	Filling stations (Retail Trade).....	91
76	Que.	Tobacco, cigars, and cigarettes (Mfg.).....	78	81	Coal and wood (Retail Trade).....	99	106	Quarries, gravel pits; salt wells.....	91
77	Ont.	Hosiery and knitted goods (Mfg.).....	78	78	Coal and wood (Retail Trade).....	99	84	Automobile repair service.....	91
78	Ont.	Coal and wood (Retail Trade).....	80	75	Furniture (including upholstery) (Mfg.).....	100	108	Building and structures.....	91
79	B.C.	Hotels, restaurants, and taverns.....	83	76	Tobacco, cigars, and cigarettes (Mfg.).....	101	18	Dairy farming.....	92
80	N.S.	Forestry and logging.....	83	77	Hosiery and knitted goods.....	102	70	Biscuits and confectionery (Mfg.).....	92
81	Que.	Coal and wood (Retail Trade).....	86	84	Automobile repair service.....	102	54	Barber and hairdressing shops.....	92
82	Ont.	Woolens and worsteds (Mfg.).....	87	87	Water transportation.....	102	99	Cartage, trucking, and haulage service.....	92
83	Ont.	Taxicabs, livery, and bus service.....	92	90	Cartage, trucking, and haulage service.....	104	87	Water transportation.....	92
84	Que.	Automobile repair service.....	93	94	Automobile repair service.....	104	100	Automobiles and accessories (Retail Trade).....	93
85	Ont.	Boots and shoes (Mfg.).....	94	96	Forestry and logging.....	104	111	Building and structures.....	93
86	Que.	Rubber products (Mfg.).....	94	71	Tanning (Mfg.).....	107	Education.....	94	94
87	N.S.	Water transportation.....	94	101	Grain growing.....	108	107	Bricks and tile (Mfg.).....	94
88	Ont.	Brass and copper products (Mfg.).....	95	99	Billiard halls and sporting clubs.....	109	109	Women's clothing—skirts, cloaks, waists (including children's wear) (Mfg.).....	94
89	Alta.	Hotels, restaurants, and taverns.....	96	103	Gardening—truck farming.....	109	45	Education.....	95
90	Que.	Cartage, trucking, and haulage service.....	96	88	Brass and copper products (Mfg.).....	109	11	General and departmental (Retail Trade).....	95
91	Man.	Hotels, restaurants, and taverns.....	98	92	Iron smelting, converting, refining, rolling (Mfg.).....	112	65	Meat, poultry, and fish (Retail Trade).....	95
92	Que.	Iron smelting, converting, refining, rolling (Mfg.).....	101	110	Gardening—truck farming.....	112	114	Sawmill products (Mfg.).....	95
93	N.B.	Pulp and paper (Mfg.).....	101	95	Sheet metal products (Mfg.).....	115	105	Men's clothing—suits, coats (Mfg.).....	95
94	Que.	Shipbuilding.....	101				56	Private domestic service.....	97
							104	Printing, publishing, and bookbinding.....	97
								Glass and its products (Mfg.).....	97

LI.—NORMALITY OF DISTRIBUTION OF UNEMPLOYMENT IN THE 122 SELECTED INDUSTRIES OF THE SAMPLE, AS INDICATED BY INDICES OF THE THREE CRITERIA (1) AVERAGE TIME LOST BY ALL WAGE-EARNERS, (2) PERCENTAGE OF ALL WAGE-EARNERS LOSING TIME AND (3) AVERAGE TIME LOST BY WAGE-EARNERS LOSING TIME, ARRANGED AROUND THE MEAN, CANADA, YEAR ENDED JUNE 1, 1931—Con.

(1) Average Time Lost by All Male Wage-Earners (Index 10, Statement L)				(2) Percentage of All Male Wage-Earners Losing Time ¹ (Index 6, Statement L)			(3) Average Time Lost by Male Wage- Earners Losing Time ¹ (Index 10 Index 6)		
No.	Province	Industry	Index	No.	Industry	Index	No.	Industry	Index
95	Ont.	Sheet metal products (Mfg.)	102	93	Pulp and paper (Mfg.)	116	42	Lodging and boarding houses	98
96	Ont.	Automobile repair service	102	94	Shipbuilding	118	96	Automobile repair ser- vice	98
97	Ont.	Hardware and tools (Mfg.)	107	85	Boots and shoes (Mfg.)	119	115	Forestry and logging	98
98	Ont.	Wire and wire goods (Mfg.)	107	82	Woolens and worsteds (Mfg.)	121	2	Religion	100
99	Ont.	Billiard halls and sport- ing clubs	109	98	Wire and wire goods (Mfg.)	125	8	Banking	100
100	Ont.	Cotton goods—yarn, cloth, thread (Mfg.)	110	112	Mixed and general farm- ing	125	32	Private domestic service	100
101	Alta.	Grain growing	111	86	Rubber products (Mfg.)	128	38	Drugs and toilet prepara- tions (Retail Trade)	100
102	Que.	Quarries, gravel pits; salt wells	113	97	Hardware and tools (Mfg.)	128	99	Billiard halls and sport- ing clubs	100
103	Ont.	Gardening—truck farm- ing	117	104	Glass and its products (Mfg.)	128	61	Barber and hairdressing shops	100
104	Ont.	Glass and its products (Mfg.)	124	102	Quarries, gravel pits; salt wells	128	13	Education	100
105	Que.	Men's clothing—suits, coats (Mfg.)	124	105	Men's clothing—suits, coats (Mfg.)	130	117	Iron smelting, convert- ing, refining, rolling (Mfg.)	100
106	Ont.	Quarries, gravel pits; salt wells	130	100	Cotton goods—yarn, cloth, thread (Mfg.)	134	83	Taxis, livery, and bus service	101
107	Ont.	Bricks and tile (Mfg.)	130	107	Bricks and tile (Mfg.)	138	101	Grain growing	103
108	N.B.	Building and structures	132	106	Quarries, gravel pits; salt wells	143	119	Coal mining	103
109	Ont.	Women's clothing— skirts, cloaks, waists (including children's wear) (Mfg.)	135	109	Women's clothing— skirts, cloaks, waists (including children's wear) (Mfg.)	144	89	Hotels, restaurants, and taverns	104
110	B.C.	Gardening—truck farm- ing	136	111	Building and structures	145	32	Education	105
111	N.S.	Building and structures	138	116	Fishing	151	16	Laundries; laundering	105
112	B.C.	Mixed and general farm- ing	144	118	Agricultural implements and machinery (Mfg.)	156	103	Gardening—truck farm- ing	107
113	Que.	Asbestos mining	146	120	Fish curing and packing (Mfg.)	160	91	Hotels, restaurants, and taverns	111
114	N.B.	Sawmill products (Mfg.)	156	114	Sawmill products (Mfg.)	163	22	Investment and loan	112
115	N.B.	Forestry and logging	165	115	Forestry and logging	169	116	Fishing	113
116	B.C.	Fishing	170	113	Asbestos mining	173	79	Hotels, restaurants, and taverns	114
117	N.S.	Iron smelting, convert- ing, refining, rolling (Mfg.)	182	122	Building and structures	177	67	Hotels, restaurants, and taverns	115
118	Ont.	Agricultural implements and machinery (Mfg.)	189	121	Building and structures	177	47	Investment and loan	117
119	B.C.	Coal mining	189	117	Iron smelting, convert- ing, refining, rolling (Mfg.)	181	121	Building and structures	119
120	B.C.	Fish curing and packing (Mfg.)	205	119	Coal mining	184	110	Gardening—truck farm- ing	121
121	Alta.	Building and structures	210				118	Agricultural implements and machinery (Mfg.)	121
122	Sask.	Building and structures	211				122	Building and structures	122
							120	Fish curing and packing (Mfg.)	128
Standard deviation = 46 or 9.4 p.e.									
(4-9 weeks in the year)									
Mean = 75 or 15.4 p.e.									
(9-9 weeks in the year)									
Standard deviation = 42.6 or 18.7 p.e.									
Mean = 83 or 30.5 p.e.									
Standard deviation = 15.1 (3.7 weeks)									
Mean = 88 (21.4 weeks)									
Skew = -.346									
Skew = -.132									
Skew = -.009									
Correlation between (1) and (2), r = .95									

Standard deviation = 46 or 9.4 p.e.

Mean = 75 or 15.4 p.e.

Skew = .346

Correlation between (1) and (2), $r = .95$

Standard deviation = 42.6 or 13.7 p.e.

Mean = 83 or 30.5 p.e.

Skew = .132

Standard deviation = 15.1 (3.7 weeks)

Mean = 88 (21.4 weeks)

Skew = .009

Criterion 1. Time lost by the industry—or average time lost by the full wage-earning body—shows the least normal distribution.

Criterion 2. The percentage of wage-earners losing any time or, conversely, the percentage of wage-earners who lost no time has a slightly more normal distribution.

Criterion 3. The average time lost by wage-earners losing any time shows a very marked normality.

In analysing the above, let us trace the evolution of working time from an initial stage such as might exist in a small or primitive community. Let us suppose that the working time lost by all industries was evenly distributed among all wage-earners in all industries. We would then have a condition of absolute interdependence of industries and under such conditions criterion 2 would not exist. That is, we would only be concerned with the number of wage-earners and the total time lost, as every one would lose time and lose the same time as his fellow.

Now let us take a further stage, every wage-earner in every industry still loses some time, but certain occupation groups lose less time than others. This would mean that industries having larger concentration of those occupations would lose less time than those having smaller concentrations. Criterion 2 would still not exist, but criterion 1 instead of showing every industry uniform, would show variations as would criterion 3, i.e., there would be a perfect correlation between 1 and 3.

The third stage would show some occupations becoming so essential as to be losing no time at all, with the result that all the loss of working time would have to be borne by the remaining wage-earners. We would now be concerned with all three criteria. In this stage, industries have lost much of their interdependence and have acquired definite individual characteristics. Examining the status of the wage-earners and the industries, we find time lost by the wage-earners varying from full employment to full unemployment. Non-essential and unprofitable industries have dropped out of the picture and essential and profitable ones have occupation content which—from the nature of the industry—show a large percentage of wage-earners losing no time. Naturally, there is a rush of wage-earners from unprofitable occupations and industries to the favoured and essential ones. These industries can absorb only a limited number of wage-earners and gradually a process of selection evolves; the more essential and prosperous the industry, the more intensive the selectivity it exercises.

Thus we see the importance of the connection between criteria 1 and 2 and can explain differences in the normality of distribution from the three viewpoints of unemployment.

The wage-earners comprised in criterion 1 are not all subject to variation. A great portion lose no time at all, the variation in time lost occurring altogether among the remaining wage-earners. This factor naturally militates against any normal distribution.

In criterion 2, the percentage of wage-earners losing time was found to correlate very highly with the average time lost by all wage-earners, but the fact that every wage-earner in criterion 2 lost some time enabled the existing normality to be fully shown.

The fact that criteria 1 and 2 correlate very highly makes it a mathematical necessity that criterion 3, which is nothing more nor less than the ratio $\frac{\text{criterion 1}}{\text{criterion 2}}$, will show a central tendency proportional to the existing correlation. However, there is no necessity that criteria 1 and 2 should correlate highly or at all. It is very significant that the time lost by those wage-earners losing time bears little relation to the time lost by the industry. On the basis of time lost then, those losing time closely approximate in time lost the group of wage-earners connected with "unspecified" industries. This latter class is not definitely connected with any industry. In other words, they are a surplus or at best a contingent labour supply. Yet those wage-earners specifically connected with definite industries and losing time, more closely approximate, from the standpoint of time lost, to the "unspecified" worker than to the regular specifically-attached worker. From the standpoint of the industry, these workers are not connected with it.

Forces or Phenomena Causing or Associated with Different Degrees of Unemployment.—The foregoing attempted to describe the manner in which industries differ in degree of unemployment. It will now be necessary to investigate the degree to which certain well-known forces or phenomena enter into this difference. It will be remembered that we have just shown that first and foremost the unemployment in each industry is related to that in all industries. In addition to this concept we have another, *viz.*, the existence of certain forces more or less external to the industry which function either as causes or concomitants of the unemployment in the industry. These forces affect different industries to a different degree because they themselves exist in different degrees but none the less they are constant forces. It is only when the influences of (1) the whole, (2) these constant forces, are removed that we see the true differences between industries, i.e. the differences caused by qualities or conditions inherent in the industries. Seven such forces were investigated and indices (with all Canada as base) of these forces are shown along with the index of unemployment in Statement L. These forces are: (a) age content, (b) seasonality, (c) locality, (d) juvenile content, (e) female

content, (f) earnings, (g) degree of eradication of independent worker. The method of derivation of the indices of these forces and the manner in which, on *a priori* grounds they are expected to influence unemployment in the industry will now be described in detail.

(a) *Age Content*.—The distribution by age of the wage-earners composing an industry and the unemployment among the different age groups is dealt with in detail in another chapter of this monograph. In this chapter, we are using this idea as having a direct bearing on the unemployment of the industry. That is, on *a priori* grounds, we would expect, other things being equal, that an industry having an age content favourable as compared with that of Canada as a whole, *i.e.*, favourable on the basis of liability to unemployment among the component age groups, would actually show less unemployment *pro rata*. To obtain a measure of this liability to unemployment by age content we formed an index as follows: the percentage unemployed in each age group in each industry considered was determined (see 1931 Census, Volume VI, Table 12). Then we found the percentage of all wage-earners in Canada in each age group. By weighting the unemployment in each age group by the percentage of wage-earners in all Canada in the same age group, a figure of unemployment was obtained which indicated what amount of unemployment would exist were the age distribution the same as for all Canada. The *actual* percentage unemployment in each industry was then divided into the standardized figure, derived separately for each industry. From this we can readily see that an industry showing a favourable age content would appear, in index form, as less than 100 (which is in every case the base and the figure for all wage-earners in Canada).

(b) *Bias of June 1*.—When unemployment figures are based on the percentage of all wage-earners who are not at work on one given day of the year (in the case of the census, June 1) there is bound to be a bias, if not in all industries collectively, at least in many of the individuals. That is, the unemployment on June 1 would be expected to be either greater or less than the average figure for the year. The census year ending on June 1, was happily chosen as this date usually is a point somewhere between the low period of industrial activity—the months of November, December and January—and the high period which is ordinarily during the months August, September and October. Usually, of course, the actual monthly figures of employment, or estimates of unemployment, do not show this consistent seasonality of industry in its true perspective, due to the fact that, economically, every year is either a time section of a trend of falling or of rising industrial activity—industrial conditions rarely approaching a static condition. In other words, in a period of falling industrial activity such as existed during the period June, 1930-June, 1931, the bias of June 1 as compared to the year would be composed of two elements (1) seasonal variation, (2) trend of industrial activity over a period of time of which this year is only a portion.

It is well known that seasonal fluctuation of industrial requirements occurs fairly regularly, even in the face of a severe industrial slump, such as was occurring between June, 1929 and June, 1933. June 1, 1931 actually showed a smaller percentage of wage-earners employed than for any other month in the year, but when cleared of secular trend followed along the usual lines of seasonal improvement.

The index of bias of June 1 was obtained as follows:—

$$\frac{\text{p.c. unemployed June 1}}{\text{average p.c. unemployed for the year}^*}$$

The numerator thus formed for every industry was divided by a constant (the above ratio for all wage-earners in Canada).

It is noteworthy that the figure of unemployment at the end of the year (June 1, 1931), 20.8 p.c., was actually only slightly worse than the figure for the year, 20.5 p.c.

The following is an attempt to make clear the influence of a trend of increasing unemployment (such as was taking place during the period June, 1930-June, 1931) on the index of bias of June 1.

Suppose that at the start of the year 12 people had jobs. As industrial conditions were getting worse workers would be laid off at various times during the year. However, at the same

* This figure obtained by expressing the average number of weeks lost per wage-earner as a percentage of 52.

time, during the period of seasonal industrial revival in the summer months some of those laid off would be taken back or some person not previously working would be recruited.

Supposing the following policy of employment was followed:—

- after 2 months, Employee 1 laid off;
- after 4 months, Employee 2 laid off;
- after 5 months, Employee 3 laid off;
- after 6 months, Employee 4 laid off;
- after 7 months, Employee 5 laid off;
- after 11 months, Employee 4 taken back;
- after 12 months, Employee 3 taken back.

On June 1, 1931, 3 of the original 12 would not be at work or 25 p.c. of the total. The total working months lost by the wage-earners during the year would be $(10 + 8 + 7 + 6 + 5 - 1)$ or 35 months. That is, the average number of months lost during the year would be 2.91 or 24.2 p.c. of the year, a figure slightly less than that for June 1.

Now, suppose that instead of original Employees 4 and 3 being taken back, the industry hired 2 persons not among the original employees. Then, on June 1 when enumerated there would be the 12 original wage-earners plus the 2 additions—14 wage-earners in all—of which 5, or 35.7 p.c. were not at work.

From the viewpoint of the industry the actual time lost during the year would remain the same, but in the enumeration this total would be increased by the 11 and 12 months not worked during the year by the recent recruits, *i.e.*, 14 wage-earners would lose $(12 + 11 + 10 + 8 + 7 + 6 + 5) = 59$ months, the average being $\frac{59}{14} = 4.2$ months or 35 p.c. of the year—

nearly the same figure as for June 1. Now conditions are obviously worse on June 1, 1931 than on June 1, 1930, yet the figures for the year are no better. An explanation of this is that the seasonal tendency to revive industry from June on has a tendency to over-shadow the unemployment accumulated during the year. It is well to note here, however, in vindication of the validity of census methods that despite these unavoidable chances of error, the figures of unemployment were somewhat greater on June 1, 1931 than for the year preceding—which, of course was in line with the monthly estimates.

(c) *Locality*.—Although certain industries in Canada are very much concentrated in more or less limited areas, the majority outside of the "Manufactures" are widely spread. One industry, for example, might be thriving in British Columbia, while the same type of industry would be slack in Nova Scotia. It would, therefore, tell us nothing of the actual conditions, were we to add the unemployment of the two and find the average—because the surplus workers in Nova Scotia would not have the capital to hazard the long trip across the continent to fill the openings in British Columbia. Rather, they would drift into other industries nearer home or remain idle, while British Columbia would take on either young people, the unemployed from its other industries or immigrants. This, then, is the main reason why we have selected industries by provinces. Now, however, we are faced with the following question. Would the unemployment be greater or less in the industry if all localities in Canada were under similar economic conditions—or how much of the unemployment is due to the locality? To obtain this information in index form, using as a base some feature of unemployment in all Canada, is not so simple as might be supposed. The first suggestion that comes to mind is to express the unemployment in all industries in a particular province in terms of the figure for unemployment in all industries for all Canada—the unemployment in each industry being multiplied by its provincial ratio.

The objections to this index are as follows: (1) A summation of *all industries* taken as a base might include features resulting from heavy concentration of a few industries. That is, the provincial figure for *all wage-earners*, might be unduly influenced by conditions in one or two large industries. (2) Conditions again differ widely in different parts of the province. Conditions vary greatly between urban and rural areas and also between different cities. Figures for a province do not take into account the degree of concentration of the population, with the resulting economic differences between areas in the province. To remove the first objection, it was decided to use as an indication of locality difference of unemployment, the percentage unemployed in the "occupation" class known in the census as "others"—a group consisting entirely

of labourers and unskilled workers who depend upon no single industry for employment and whose unemployment is therefore more truly representative of local conditions than that of any other group. To remove the second objection, the unemployment in the above group "others," was found not only for the province *in toto*, but was found individually for all cities of 30,000 population and over and for the rest of the province, i.e., the total for the province less the combined totals for all cities of 30,000 and over in the province. While these figures do not give an ideal picture of the dispersion of unemployment—chiefly because the "rest of province" does not differentiate between purely rural areas and cities of 25,000 population—it is the best obtainable with respect to the data used.

LII.—UNEMPLOYMENT AMONG LABOURERS AND UNSKILLED WORKERS, BY ZONES, CANADA AND PROVINCES, YEAR ENDED JUNE 1, 1931

Province	Zone	P.C. of Year Lost ¹
ALL CANADA.....		35.48
Prince Edward Island.....	Whole Province.....	21.28
Nova Scotia.....	Halifax.....	36.96
	Rest of Province.....	31.50
New Brunswick.....	Saint John.....	38.36
	Rest of Province.....	33.69
Quebec.....	Montreal.....	37.00
	Quebec.....	35.30
	Verdun.....	46.32
	Rest of Province.....	30.92
Ontario.....	Toronto.....	38.69
	Hamilton.....	43.57
	Ottawa.....	35.00
	London.....	32.19
	Windsor.....	60.25
	Rest of Province.....	35.50
Manitoba.....	Winnipeg.....	50.15
	Rest of Province.....	38.61
Saskatchewan.....	Regina.....	53.19
	Rest of Province.....	37.75
Alberta.....	Calgary.....	49.02
	Edmonton.....	44.98
	Rest of Province.....	31.89
British Columbia.....	Vancouver.....	46.04
	Rest of Province.....	38.54

¹ See 1931 Census, Vol. VI, Tables 33-37.

Having thus obtained figures for the zones as above—which we submit are representative of true local conditions of unemployment when based on the all-Canada figure—we must now apply them to the individual industries with which we are concerned. The procedure adopted was as follows: first, the number of wage-earners in a particular industry in each of the zones was ascertained. These numbers were multiplied by the percentage unemployed unskilled in their respective zones. The sum of the product thus found was divided by the total wage-earners in the industry. The resulting figure was then divided by the percentage unemployed unskilled in all Canada—this final figure being the "locality" index for this particular industry. As an illustration we will take a specific industry "water transportation" in Nova Scotia. We have in this province two zones, (1) Halifax, (2) the rest of the province.

Zone	P.C. of Year Lost by		Number of Wage-Earners in		
	Unskilled Labour		Water Transportation		
Halifax.....	36.96	×	1,730	=	63,940.80
Rest of Province	31.50	×	3,238	=	101,997.00
			4,968		165,937.80
$\frac{165,937.80}{4,968} = 33.40$					
which divided by percentage of year lost by unskilled labour in all Canada, $\left(\frac{33.40}{35.48}\right) = 0.91$					

Then, if we call the base 100—the index of locality for this industry is 91—we may say the locality is favourable in that we would expect less unemployment in this industry, other things being equal, than would be found in the same type of industry under general Dominion-wide conditions.

(d) *Juvenile Content.*—It was considered advisable, in addition to forming an index of age liability to unemployment, to form also an index showing the percentage of all wage-earners formed by those who were between the ages of 10 and 20. The index was formed very simply by dividing the percentage juvenile of the specific industry by the same figure for all Canada in all industries, the figure for all Canada being the base. On *a priori* grounds, there is little to be said regarding the expected behaviour of this index in relation to unemployment. Unfortunately, a really significant factor, i.e., the relation of the percentage juvenile in 1931 compared with some previous census years, is not available for each "industry" as we have defined the term.

(e) *Female Content.*—Although we are now dealing solely with male wage-earners, some pertinent information on male unemployment may be revealed by a study of the relation of unemployment among males to the percentage female of all wage-earners in the industry. For example, it might be found that a male industry showing small unemployment might show either a large or a small female content. Depending upon the result one would have a basis for saying either, that females were attracted to an industry showing a large percentage of males unemployed—and thereby aggravating this unemployment—or that females were not attracted to industries showing large male unemployment.

However, it must be remembered that when an index of this sort is correlated with an index of unemployment among males, the deduction need not necessarily be, if a positive condition exists, that females are displacing males or *vice versa*. A deduction to this effect is only true when we compare the percentage female of all wage-earners for two or more different periods and establish a trend. As this data for different industries is not available in the same form for separate census years, this "trend" will not be dealt with at the present time.

This index was formed in precisely the same way as the index of juvenile content, i.e., the percentage female of all wage-earners for the individual industry was found and related to the same figure for all industries in Canada as a base.

(f) *Earnings.*—The average earnings per week worked by a wage-earner in an industry serves as a rough indication of the occupational content of that industry. Occupations which are easily learned or for which the supply exceeds the demand, do not command a high remuneration. Thus in an industry showing a large proportion of labourers and unskilled workers, not only would we expect a larger amount of unemployment, but also, as a concomitant, a lower rate of earnings. That is, we would expect an index of earnings to correlate negatively with an index of unemployment. Largely on this basis, therefore, we have decided to use an index of earnings, formed by finding the average earnings per week worked per wage-earner in a specific industry and referred to the average earnings per week worked for all industries in Canada as a base.

(g) *Degree of Eradication of Independent Worker.*—With the increased standardization and mass production of economic goods that has been so marked since the Industrial Revolution, there has been a tendency for the small employer and independent worker to drop out of the competitive field. Some economists are wont to claim that the former independent worker has been absorbed into the newer technological processes with probably no loss to himself—taking into consideration the higher standard of living resulting from the decreasing cost of production and therefore of cost to the consumer of economic goods. It would seem, however, that when an industry absorbs a great many skilled artisans, these former independent workers are forced into competition with younger and relatively less skilled workers, as mechanized industry requires alertness rather than specialized skill. The result, in so far as the industry is concerned, is usually that there is an increase in the type of worker relatively easily obtained—but little increase in the type of worker regarded as specialized or indispensable. By observing the proportions of wage-earners and independent workers in various industries we are only able to see the degree of eradication of independent worker which exists at the time, but it is interesting to see to what

extent this process has been embraced by different types of industries. It might be expected that where a large proportion of independent workers existed in an industry, they would create a sort of safety valve to receive the surplus wage-earners created by industrial depression periods. Unfortunately, while there is a marked tendency for independent workers to give up their establishments and become wage-earners during boom periods, once they have become wage-earners, there is considerably less likelihood of their being able to return to their former establishment in times of depression since, in times of depression, the small employer has less chance of surviving than the large employer of labour. Thus the latest figures show a cumulative increase in wage-earners, the result of additions during every boom period, the great majority of which do not return during depressions but are left without jobs and a large percentage depending on the state for subsistence.

What chance there is of returning from wage-earner status to that of independent worker during depression is naturally lessened as the proportion of independent workers to that of the whole industry grows less—remembering that we are concerned now with specific industries. (Wage-earners from one industry may and do return to independent worker status in other industries.)

The index was formed by obtaining the percentage who are wage-earners of all who are gainfully occupied for each industry and relating their percentages to the same figure for all industries in all Canada as a base.

The Significance of the Means of the Indices.—It must be remembered that the indices are formed from a *sample* of industries, which, while representative of all industries exclusive of three large groups and the "unspecified" containing mostly casual labourers with no industrial connection, due to this exclusion would be expected to have different means from the mass average of all wage-earners in all Canada. That is, the expected error of the sample is increased because the base of the indices was "all wage-earners in all industries in Canada." This base was chosen to avoid confusion. If the sample was perfect for all-Canada figures the mean would be in every case 100 (the base). We find the means of the three measures of unemployment to be: June 1, 72; the year, 75; the percentage of wage-earners who lost any time, 85, i.e., the figures of unemployment are lower than the figures for all Canada. This is to be expected, owing to the exclusion of the "unspecified" class, where the unemployment is very high. However, we find that in the data, all indices are close to 100 with the exception of the "degree of eradication of the independent worker," which is 133 and therefore higher than the all-Canada figures by a significant amount. This discrepancy also can be accounted for readily. Our sample was chosen from the industries having from 2,000-6,000 wage-earners. Therefore, the very large agricultural industries were not adequately represented. It is in agriculture where the "own accounts" are far superior in number to wage-earners. Agriculture then, not being well represented in the sample, would make the percentage wage-earners of all gainfully occupied considerably lower in the all-Canada figures—with the result that with all-Canada figures as a base, the percentage wage-earners of all gainfully occupied in the sample would be high.

Correlation of Unemployment with Certain Forces.—In standardizing rates (e.g., death rates, etc.), for, say, age differences, it is customary to divide the crude rates by an index for age similar to that given in Statement I, i.e., the standardized death rate of a certain place A would be the general death rate it would have if (the rate for each age group remaining the same) the age distribution were the same as that of the standard population. This, of course, assumes that if place A were supposed to have the standard age it would still retain its specific death rates, a matter by no means certain. However, this is not the chief objection to dividing the crude rate by the standardizing factor in the case of unemployment data. The difficulty lies in the fact that we have to standardize for several factors instead of one. If we first standardized for age content we could not standardize for seasonality until we had first standardized the seasonality index for age content and so on. Each successive index would have to be standardized for all the indices that came before, and even then the results would not be fully satisfactory. The means of overcoming this difficulty is the use of the multiple correlation regression equation. There is no question that this use is legitimate in this case. Further,

since all the controls are in the shape of indices and consequently have a common form, the data are in a shape suitable for the application of multiple correlation. The regression equation is:—

$$X_1 = A + BX_2 + CX_3 + DX_4 + EX_5 + GX_7 + HX_8 + KX_9,$$

where X_1 = percentage unemployed June 1;

X_2 = age liability to unemployment;

X_3 = bias of June 1;

X_4 = locality;

X_5 = female content;

X_7 = juvenile content;

X_8 = average earnings;

X_9 = degree of eradication of independent worker.

An evaluation of these results will be made later together with a similar evaluation of the results when other criteria of unemployment are used.

Other Measures of Unemployment.—The above refers to unemployment when measured by the percentage not at work on June 1. We have, however, two other criteria for unemployment in industries as mentioned before, viz., (1) the percentage of all wage-earners who lost any time during the year, (2) the average number of weeks lost by all wage-earners during the year. The June 1 data are simply a sample—one day of the 365 in the year—and are apt to differ from those of the year because a particular date is very apt to show a seasonal bias.

The average weeks lost during the year as a measure of unemployment overcomes the probability of seasonal bias, but, as was shown when discussing the index of seasonality, is subject to certain errors peculiar to the nature of the subject.

The index formed for this measure of unemployment was numbered 10 for purposes of correlation, and was derived as explained in Statement L. The correlation was worked in the same manner as the index of unemployment on June 1, X_1 merely being replaced by X_{10} . The various constants and coefficients are given in Appendix 2.

The percentage of wage-earners who lost any time during the year is a criterion of unemployment different from the two previously mentioned, and, if our theory is sound, a very important and interesting one. It shows what for lack of a better term may be called the "incompactness" of the industry, but its chief function is to show the extent to which any industry is capable of varying within itself. Thus, if 40 p.c. of the industry lose any time at all during the year, only these 40 p.c. can show different degrees of unemployment—the other 60 show constant *employment*. The relationship of this percentage losing any time to the degrees of unemployment shown is discussed in Chapter I where it is shown that without question it is an important criterion.

The index for this measure of unemployment was derived as explained in Statement L and was called Index 6 and correlated with the seven sets of data in the same way as the first two criteria—being known as X_6 . The various constants and coefficients are given in Appendix 2.

Having thus briefly set out the methods and symbols used in correlating the three measures of unemployment with the seven sets of data expected to influence or bear a relation to unemployment we will now show the results and attempt to explain any which are significant.

It was found that the data correlated with all three measures of unemployment to a nearly uniform extent, the correlation coefficients being $R_{1D} = .69$, $R_{10D} = .68$, $R_{6D} = .64$. The differences were found to be insignificant, so for all practical purposes the three measures may be said to correlate to the same extent.

In other words the data account for or are related to 45 p.c. of the unemployment (R_2), the remaining 55 p.c. being largely made up of differences peculiar to individual industries. It is not claimed that our indices are perfect or that in 100% they represent all the factors common to all industries, but we believe they cover the major factors based on the interdependence of unemployment in industries.

PROPORTIONAL WEIGHT OF FACTORS EXPECTED TO INFLUENCE UNEMPLOYMENT AS MEASURED BY THREE CRITERIA

LEGEND

Earnings.....		Locality.....	
Bias of June 1.....		Juvenile content.....	
Age.....		Degree of.....	
Female content.....		eradication of independent worker.....	

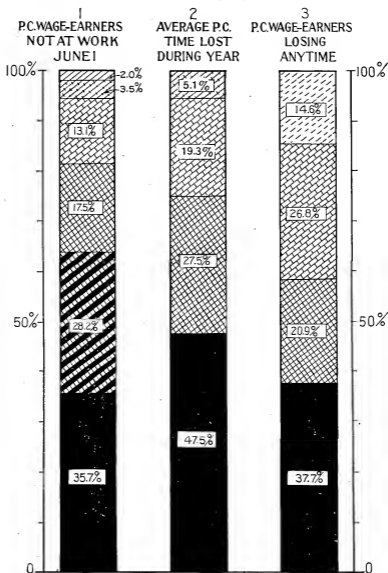


Chart 4

From the figures below, we can see for what percentage of the whole correlation each index accounted. The figures are represented graphically in Chart 4.

X_{10}	P.C.	X_8	P.C.	X_1	P.C.
Earnings.....	47.5	Earnings.....	37.7	Earnings.....	35.7
Age.....	27.5	Female content.....	25.8	Bias of June 1.....	28.2
Female content.....	19.3	Age.....	20.9	Age.....	17.5
Locality.....	5.1	Degree of eradication of independent worker.....	13.1	Female content.....	13.1
Juvenile content.....	0.0	Bias of June 1.....	0.0	Locality.....	3.5
Bias of June 1.....	0.0	Locality.....	0.0	Juvenile content.....	2.0
Degree of eradication of independent worker.....	0.0	Juvenile content.....	0.0	Degree of eradication of independent worker.....	0.0
Total.....	100.0	Total.....	100.0	Total.....	100.0

We note at a glance that three factors determine nearly the whole correlation in each case, average earnings per week worked, age and female content. However, there are two other factors which, lacking any appreciable weight in two correlations, are prominent in the third. "Bias of June 1" accounts for 28 p.c. of the total weight when June 1 is used as the measure of unemployment but has no weight with regard to the other two measures.* When we consider the nature of the index of bias of June, based on the ratio of a particular day in the year over the average for the year, we can see this index could only have significance when regarded from the viewpoint of that particular day.

"Degree of eradication of independent worker" has no weight when the time lost by the industry (X_1 , X_{10}) is used as the measure of unemployment but has a positive correlation with X_8 (the percentage of wage-earners who lost any time). This is very significant. The greater the proportion of wage-earners to independent workers in the industry, the greater is the percentage of wage-earners who lost any time. The question immediately arises—why does not the time lost by the industry also correlate with this factor? Here again one must consider the facts furnished by a person enumerated in the census. We have mentioned that a considerable percentage of the gainfully occupied are farmers' sons who leave the farm to obtain employment in various industries. Let us consider a person, who, on the day of enumeration was a wage-earner but who had, during the preceding year, been a "no-pay worker" on his father's farm. He might report the time spent on the farm as time lost, arguing that he had not received wages during that period. He might on the other hand feel that he had lost no time as he had actually worked continuously through the year. In either case, from the viewpoint of the industry where he worked when enumerated, an untrue picture of time lost or worked would be given. Thus we see that there is a chance of a casual error being introduced into the "time lost by the industry" which might well nullify an actually existing correlation with the "eradication of independent worker." The same result would hold were the person enumerated engaged in the same industry during the year, first as an independent worker and later as a wage-earner. This would appear to be a logical explanation of the lack of correlation between this factor and the time lost by the industry. On the other hand, the chances of the person enumerated being in one or other of the two classes "losing time" or "not losing time" would be subject to less of this casual error and therefore a somewhat more reliable figure. Hence, any correlation existing between "degree of eradication of independent worker" and "percentage losing any time" would be shown at face value, so to speak.

The Necessity of a Twofold Measure of Unemployment.—We are now faced with the necessity of using one or two of the measures of unemployment rather than all three. Unemployment must be looked at from two viewpoints (1) that of the industry, (2) that of the wage-earner.

If we take the percentage not at work on June 1 we are limited to two dimensions as it were, we merely see the percentage working and the percentage not working. However, by using two other measures (1) percentage of time lost during the year, (2) percentage of wage-earners losing time during the year, we are able to consider the third dimension "time," and appreciate the dispersion of unemployment. The first measures the gross unemployment in the industry, the second the concentration of that unemployment.

* If we had not used the index for "bias of June 1," the correlation existing between X_1 and the data would be considerably less.

If the concentration of unemployment had no relation to the gross unemployment, the former would have no particular significance—but we find a very nearly perfect correlation between the two ($r = .93$).

This can mean only one thing. An industry showing small unemployment shows *pro rata* a small percentage of the wage-earners losing any time. An industry showing great unemployment shows *pro rata* a large number of the wage-earners losing time. Therefore, the time lost by the industry depends directly on the extent to which it is able to maintain a full-time staff. We have established that the combined weight of the three factors (1) rate of earnings, (2) female content, (3) age content, has a direct bearing on unemployment. There may be doubt that the individual indices express in practice what their names imply. For example, "female content," is very likely to have a meaning which is more significant when an analysis is made of the nature of female occupations in the various industries. Average earnings (per week worked) is apt to be more significant when we have an appreciation of the distribution of the type of worker in the industry, while the "age liability to unemployment" which has been shown to indicate that the age structure of the industry varies to a great extent as the unemployment, might more accurately be termed an indication of a process of selection by the industry with a view to obtaining a certain age of worker which would fit the requirements of the industry and to that extent would minimize the unemployment in that industry.

At any rate, we may say that the industries showing low unemployment show (1) high average weekly earnings by the wage-earners, (2) a larger proportion of females and (3) an age content which may be termed favourable. We can safely conclude that when an industry is able to control the above factors, unemployment in the industry is minimized.

PART B—MAIN INCIDENCES OF INDUSTRY ON UNEMPLOYMENT

Up to this point we have presented and prepared for analysis representations of phenomena which are associated with unemployment in industries. We have dealt generally with their relation to industry as a whole and we have discussed the statistical methods used to measure these relations. It is our purpose at this stage to marshal for inspection the aspects of different industries as they appear in tabular form, to see how different types arrange themselves according to the various criteria and to see which types adhere to observed tendencies and which types are exceptional.

Of prime importance is the distribution of the time lost in industry—the relation of the individual industries to industry as a whole. The fact that industrial unemployment shows this central tendency brings up the question: "Do those industries which come within a significant radius around the mean point of the whole, represent the general economic situation of industry in Canada at a given time?"

To answer this we must first determine what the mean unemployment of the whole really is. It is the representation of the average of a number of units, certain of which individually are practically identical with the average of the whole, but the remainder of which show varying differences from this mean until we come to individuals which may be said to be outside the field. Our mean or centre for 1931 shows that the average time lost during the year was roughly 20 p.c. This figure is useful in measuring for comparison similar figures for other years, e.g., in 1921, 11 p.c. This average shows a certain difference in industry but does not take into account the growth of wage-earners in relation to the increase in the output or the percentage of the wage-earners who bear the brunt of this loss of time.

We have indicated that in the year 1931 a trend showing the probability of unemployment per hundred wage-earners was comparable to the above figure. This idea brings up the use of the two-fold measure of unemployment (1) the percentage of time lost, (2) the number losing time. The latter criterion might be called the wage-earners' point of view. It shows that the average while useful from the viewpoint of the industry is inadequate as an expression of the viewpoint of the aggregate of wage-earners subject to unemployment.

The census is a report of the worker stating his industrial connection and extent of employment. In other words it is primarily the wage-earners' viewpoint. We are forced to face the

fact that industry is a regimentation of wage-earners. Which viewpoint is then more important—the viewpoint of the industry which is superimposed on the population or the viewpoint of the population superimposed on the industry (whose function is to supply the wants of the population)? Unemployment as a social problem, we submit, is best attacked from the viewpoint of the wage-earner. We will, therefore, consider unemployment as the average percentage time lost by the wage-earner in the industry. This measure, however, will be connected with the percentage of wage-earners who lost time in the subsequent analysis of the individual industries. Accordingly we will refer to Statement LIII showing the arrangement of the industries in the sample around the mean. We have arranged the industries in classes according to their unemployment, relative to the mean unemployment (i.e., percentage of time lost during year).

LIII.—INDEX OF YEARLY UNEMPLOYMENT IN THE 122 INDUSTRIES OF THE SAMPLE (INDEX 10 OF STATEMENT L) ARRANGED IN CLASSES AROUND THE MEAN IN ASCENDING ORDER OF MAGNITUDE

Province	Industry	Index	Class
Que.	Religion	5	4B
Ont.	Religion	6	
Ont.	Police (Municipal)	9	
Ont.	National defense	9	
Que.	Police (Municipal)	10	
Que.	Postal service	10	
Que.	Education	12	
Que.	Banking	16	
Alta.	Education	17	
P.E.I.	Mixed and general farming	18	
B.C.	Education	20	
Man.	Education	20	
Sask.	Education	23	3B
Sask.	Storage	25	
Que.	Health	26	
Ont.	Health	31	
B.C.	Electric railways	33	
Que.	Dairy farming	34	
Que.	Telephone systems	35	
Ont.	Electric railways	36	
R.C.	Pulp and paper (Mfg.)	36	
Que.	Investment and loan	37	
B.C.	Non-ferrous smelting and refining (Mfg.)	38	
Que.	Dairy products (Retail Trade)	40	2B
Que.	Electric railways	41	
Ont.	Dairy products (Retail Trade)	41	
Que.	Electric light and power production and distribution	41	
Que.	Liquors, beverages (not aerated waters) (Mfg.)	42	
N.B.	Steam railways	42	
Ont.	Telephone systems	42	
Que.	Hardware and builders' supplies (Retail Trade)	43	
Que.	General and departmental (Retail Trade)	43	
Ont.	Telegraph systems	43	
Ont.	Butter, cheese, and condensed milk (Mfg.)	44	
Que.	Silk, silk goods (including artificial silk) (Mfg.)	45	
Ont.	Laundries, laundering	45	1B
Ont.	Flour and grain milling	48	
Ont.	Drugs and toilet preparations (Retail Trade)	48	
Man.	Printing, publishing, and bookbinding	49	
Ont.	Automobiles and accessories (Retail Trade)	51	
Ont.	Hardware and builders' supplies (Retail Trade)	51	
Ont.	Lodging and boarding houses	52	
N.S.	Mixed and general farming	52	
N.S.	Steam railways	53	
B.C.	General and departmental (Retail Trade)	53	
Ont.	Illuminating and fuel gas (Mfg.)	54	
Que.	Investment and loan	54	
Ont.	Electrical apparatus (Mfg.)	54	
Ont.	Petroleum products (Mfg.)	54	
Man.	General and departmental (Retail Trade)	55	
Que.	Bread and other bakery products (Mfg.)	56	
Que.	Private domestic service	57	1B
Ont.	Paper products—boxes, bags, stationery (Mfg.)	57	
Que.	Barber and hairdressing shops	57	
Que.	Meat, poultry, and fish (Retail Trade)	58	
B.C.	Printing, publishing, and bookbinding	58	
Ont.	Slaughtering, meat packing (Mfg.)	61	
N.S.	Fishing	62	

LIII.—INDEX OF YEARLY UNEMPLOYMENT IN THE 122 INDUSTRIES OF THE SAMPLE (INDEX 10 OF STATEMENT I) ARRANGED IN CLASSES AROUND THE MEAN IN ASCENDING ORDER OF MAGNITUDE—Con.

Province	Industry	Index	Class
Que.	Biscuits and confectionery (Mfg.)	65	
Ont.	Non-ferrous smelting and refining (Mfg.)	66	
Ont.	Barber and hairdressing shops	66	
Que.	Boilers, engines, and machinery (Mfg.)	66	
Ont.	Filling stations (Retail Trade)	67	
Ont.	Private domestic service	68	
Ont.	Meat, poultry, and fish (Retail Trade)	69	
Ont.	Storage	71	
Sask.	Hotels, restaurants, and taverns	71	
Ont.	Liquors, beverages (not aerated waters) (Mfg.)	72	
Ont.	Nickel-copper mining and milling	72	
Ont.	Biscuits and confectionery (Mfg.)	73	
Ont.	Tanning (Mfg.)	75	Average
N.B.	Mixed and general farming	75	
Que.	Taxicabs, livery, and bus service	76	
Que.	Women's clothing—skirts, cloaks, waists (including children's wear) (Mfg.)	76	
Que.	Furniture (including upholstery) (Mfg.)	77	
Que.	Tobacco, cigars, and cigarettes (Mfg.)	78	
Ont.	Hosiery and knitted goods (Mfg.)	78	
Ont.	Coal and wood (Retail Trade)	80	
B.C.	Hotels, restaurants, and taverns	83	
N.S.	Forestry and logging	83	
Que.	Coal and wood (Retail Trade)	85	
Ont.	Woolens and worsteds (Mfg.)	87	
Ont.	Taxicabs, livery, and bus service	92	
Que.	Automobile repair service	93	1A
Ont.	Boots and shoes (Mfg.)	94	
Que.	Rubber products (Mfg.)	94	
N.S.	Water transportation	94	
Ont.	Brass and copper products (Mfg.)	95	
Alta.	Hotels, restaurants, and taverns	96	
Que.	Carriage, trucking, and hauling service	96	
Alta.	Hotels, restaurants, and taverns	96	
Que.	Iron smelting, converting, refining, rolling (Mfg.)	98	
N.B.	Pulp and paper (Mfg.)	101	2A
Que.	Shipbuilding	101	
Ont.	Sheet metal products (Mfg.)	102	
Ont.	Automobile repair service	102	
Ont.	Hardware and tools (Mfg.)	107	
Ont.	Wire and wire goods (Mfg.)	107	
Ont.	Billiard halls and sporting clubs	108	
Ont.	Cotton goods—yarn, cloth, thread (Mfg.)	110	
Alta.	Grain growing	111	
Que.	Quarries, gravel pits; salt wells	113	
Ont.	Gardening—truck farming	117	
Ont.	Glass and its products (Mfg.)	124	3A
Que.	Men's clothing—suits, coats (Mfg.)	124	
Ont.	Quarries, gravel pits; salt wells	130	
Ont.	Bricks and tile (Mfg.)	130	
N.B.	Building and structures	132	
Ont.	Women's clothing—skirts, cloaks, waists (including children's wear) (Mfg.)	135	4A
B.C.	Gardening—truck farming	136	
N.S.	Building and structures	138	
B.C.	Mixed and general farming	144	
Que.	Asbestos mining	149	5A
N.B.	Sawmill products (Mfg.)	156	
N.B.	Forestry and logging	166	
B.C.	Fishing	170	6A
N.S.	Iron smelting, converting, refining, rolling (Mfg.)	182	
Ont.	Agricultural implements and machinery (Mfg.)	189	7A
B.C.	Coal mining	189	
B.C.	Fish curing and packing (Mfg.)	205	
Alta.	Building and structures	210	8A
Sask.	Building and structures	211	

Mean = 75,
Standard deviation = 46,
Standard error of the mean = 4,
Percentage of time lost by male wage-earners = 100,
All-Canada average = 20.5 p.c.

LIV.—SUMMARY OF STATEMENT LIII

Degree of Unemployment and Class ¹	No. of Industries	Wage-Earners		P.C. of Time Lost
		No.	P.C.	
Less than the average..... Class 4B	12	40,099	10.0	0.0 to 4.3

¹The classes were derived in the following way. Those industries which differed from the average by less than three times the error of the mean were classed as "average", since differences within this limit might arise from an error of sampling. The remaining industries were grouped in intervals of six times the error of the standard deviation on the basis that the mid-points of these intervals were significantly different.

The Average Industry.—The foregoing statements show that only 24 of the 122 industries can be classed as having the average unemployment. We will now concern ourselves with the nature of these "average" industries. Why are they "average"? The 24 industries in this class are:—

Ont. — Woollens and worsteds (Mfg.).	Ont. — Biscuits and confectionery (Mfg.).
Que. — Coal and wood (Retail Trade).	Ont. — Nickel-copper mining and milling.
N.S. — Forestry and logging.	Ont. — Liquors, beverages (not aerated waters) (Mfg.).
B.C. — Hotels, restaurants, and taverns.	Sask. — Hotels, restaurants, and taverns.
Ont. — Coal and wood (Retail Trade).	Ont. — Storage.
Ont. — Hosiery and knitted goods (Mfg.).	Ont. — Meat, poultry, and fish (Retail Trade).
Que. — Tobacco, cigars, and cigarettes (Mfg.).	Ont. — Private domestic service.
Que. — Furniture (including upholstering (Mfg.).	Ont. — Filling stations (Retail Trade).
Que. — Women's clothing—skirts, cloaks, waists (including children's wear) (Mfg.).	Que. — Boilers, engines, and machinery (Mfg.).
Que. — Taxicabs, livery, and bus service.	Ont. — Barber and hairdressing shops.
N.B. — Mixed and general farming.	Ont. — Non-ferrous smelting, converting, refining, rolling (Mfg.).
Ont. — Tanning (Mfg.).	Que. — Biscuits and confectionery (Mfg.).

It will be noted that the regional distribution shows a preponderance of industries from Ontario and Quebec. This is no doubt to be expected as these two provinces form a large percentage of the industries in the sample. Comparing the sample and the average industries for provincial representation we find:—

Industries of Sample					
Total			Average		
Province	No.	P.C.	Province	No.	P.C.
Ont.....	48	39.4	Ont.....	13	54.1
Que.....	36	29.5	Que.....	7	28.1
B.C.....	12	9.8	B.C.....	1	4.2
N.S.....	7	5.7	N.S.....	1	4.2
N.B.....	6	4.9	N.B.....	1	4.2
Man.....	4	3.3	Sask.....	1	4.2
Sask.....	4	3.3			
Altn.....	4	3.3			
P.E.I.....	1	0.8			
Total.....	122	100.0	Total.....	24	100.0

This only shows that the average industries conform to the mathematical definition of an average, i.e., the regional distribution of the average class corresponds to that of the whole, except that Ontario is somewhat over-represented and British Columbia somewhat under-represented.

We will now compare the sample and the average class from another viewpoint, i.e., the distribution by main industry classes—these main classes being the same as those used in the 1931 Census except that "Electric Light and Power" has been classed under "Transportation and Communication."

Industry Group	Industries of Sample				
	Total		Average		
	No.	P.C.	No.	P.C.	As P.C. of Sample
Agriculture.....	8	6.6	1	4.1	12.5
Forestry, Trapping, and Fishing.....	4	3.3	1	4.1	25.0
Mining, Quarrying.....	5	4.1	1	4.1	20.0
Manufacturing.....	42	34.3	11	46.0	26.2
Construction.....	6	4.9	-	-	-
Transportation and Communication.....	14	11.6	2	8.3	14.3
Trade.....	14	11.6	4	16.7	28.6
Finance, Insurance.....	3	2.4	-	-	-
Service—Professional and Public Administration.....	13	10.7	-	-	-
Other.....	13	10.7	4	16.7	30.8
Total.....	122	100.0	24	100.0	19.7

We may say, then that the average industry class is composed mainly of Manufactures, "Other" Services (Custom and Repair, Personal, Recreational) and Retail Trade. It is worthy of note that the 11 manufactures in this class (all from Quebec and Ontario) are with two possible exceptions sheltered by tariffs from undue foreign competition and that their purpose is to supply goods for Canadian consumption. Moreover, the nature of the demand for these products might be said to indicate in a measure the present prosperity of the country. Let us review the *manufactures* in question: (1) Woollens and worsteds, (2) Hosiery and knitted goods, (3) Tobacco, cigars, and cigarettes, (4) Furniture, (5) Women's clothing, (6) Tanning, (7) Biscuits and confectionery (twice), (9) Liquors, beverages, (10) Boilers, engines, and machinery.

With the exception of the last named, all of the above manufacture consumers' goods. The Canadian consumer, if he buys these articles at all, must in most cases buy the Canadian product. The majority of the products listed, while not the prime essentials of living are certainly of sufficient importance to the consumer to enjoy a very general demand, but a demand limited by the purchasing power of the consumer, which is reflected in present unemployment. There are certain staple products which the individual must have in order to exist; these, however, are not found in the average group. The production of these staple products, since they are essential to livelihood, would not be influenced by relative prosperity or poverty to the same extent as those semi-necessities in the "average class." These semi-necessary products form a mid-group between necessities and luxuries. To illustrate: in a depression the production of necessities for *local consumption* must be maintained at a certain level. The production of luxuries must of necessity be severely curtailed. The production of semi-necessities, however, would most nearly approximate the decline in purchasing power of the consumer. Only 1 of the 10 industries mentioned is a producers'-goods industry, viz., "Boilers, engines, and machinery (Mfg.)." The industry supplies all types of Canadian industry except agriculture (by census definition) and certain specialty concerns which import their products. In this respect, therefore, there would be a relationship between average unemployment and average business conditions.

The remaining manufacture is non-ferrous smelting and refining in Ontario. The metals processed consist chiefly of gold, silver, copper, nickel, cobalt and zinc. As the bulk of the product is exported, the production would depend to a great extent upon conditions in foreign markets. To the extent, therefore, that conditions in those foreign markets resemble conditions in Canada the unemployment in this industry should approach the Canadian average.

The second representative group is "Other Services." These include "Hotels, restaurants and taverns" in Saskatchewan and British Columbia, "Private domestic service" in Ontario and "Barber and hairdressing shops" in Ontario. This group is by nature dependent on the condition of the consumer. In conditions of depression, people will spend less in hotels and taverns; they will do without servants, and spend less in beauty shops. Therefore, we would expect this group to reflect the average unemployment.

The third representative group is "Retail Trade", consisting of "Coal and wood" in Ontario and Quebec; "Filling stations" in Ontario, and "Meat, poultry, and fish". This group is "average" for essentially the same reasons as the preceding group. None of the units supplies the consumer with luxuries and none (with the possible exception of coal and wood due to the seasonal nature of the demand) is absolutely essential to livelihood.

The remaining industries in this group include two in the main group "Transportation"—"Taxicabs, livery, and bus service" and "Storage." These industries are not really representative of the true transportation class, being perhaps more closely allied to the class "Other Services." The major transportation industries are well organized monopolies of long standing, while the two above-mentioned consist of many small enterprises operating in a highly competitive field. As a result of this competition and relative flexibility they would conceivably adjust themselves more closely to general average conditions.

It is significant that only three of the primary industries are represented in the "average group."

Mining—Nickel-copper mining and milling, Ont.

Agriculture—Mixed and general farming, N.B.

Forestry—Forestry and logging, N.S.

The implication is evident that the primary industries, although constituting a most important part of the national economy, do not show the average unemployment among wage-earners. The above three industries might be called exceptions to the rule.

Nickel-copper mining and milling, Ont.—This industry is not typical of mining in Canada. In the main this is because conditions making for unemployment are less operative in this industry than for mining as a whole. The industry consists largely of a few large and well-organized firms. Canada is the world's largest producer of nickel—producing in 1931, according to the figures of the Imperial Institute, 83 p.e. of the world's supply. It is noteworthy that the entire production was from the Sudbury district of Ontario. The nickel-producing mines also produce a high-grade copper. Both of these commodities command a market which can be gauged to a fair degree of accuracy—which factor in addition to those of relative centralization of producing areas and of ownership makes for less unemployment than occurs in the average mining industry. The appearance of this industry in this average group then is apparently incidental.

Mixed and general farming, N.B.—Farming in Canada varies greatly in nature between geographical areas. This regional difference has repercussions in the nature of the census class known as "Mixed and general farming." For example—mixed and general farming in the Prairie Provinces shows conditions bordering on those experienced by grain farming. In British Columbia it is influenced by fruit farming. In other words in the West, farm labourers reporting themselves as engaged in mixed and general farming are probably working during part of the year in grain farming, or in British Columbia, in fruit growing. Moreover, the product of the "mixed and general" farms is probably composed of grain or fruit as the case may be, to a greater extent than of any other single item.

In the Maritime Provinces we have to contend with another problem. In New Brunswick, Nova Scotia and Prince Edward Island there is a large class of labour, which while working most of the year on farms, ekes out its employment by working in the logging and fishing industries. There is a strong likelihood, therefore, of a person reporting his occupation as farm labourer in the industry "Mixed and general farming" on June 1, although he will rely on work in a lumber camp during the winter or in fishing in other off seasons. Only in Quebec and Ontario can the figures for mixed and general farming be said truly to represent that type of farming, as in these

Forestry and logging, N.S.—This has a lower rate of unemployment than any of the leading producing provinces. It also has an average smaller size of establishment and as shown by the agricultural statistics there are a great many farmers who engage in part-time lumbering. This condition would also mean that a great many persons ordinarily engaged in forestry and logging filled in the seasonal slack with farm labour, thereby reducing the potential unemployment due to the logging industry.

We will now analyse the types of industries which show a progressive increase in unemployment. These classes are designated by the title 1 *A* (*A* being the closest to the average), 2 *A* the next and so on until the group 8 *A* showing the greatest unemployment is reached. The following statement shows the general representative types of each group and for purposes of comparison the "type" distribution for the whole sample is also shown.

[illegible][illegible][illegible]

Class 1 A—This class is close to the average and small in representation. The two industries, "Taxicabs, livery, and bus service" in Ontario and "Automobile repair service" in Quebec can not be said to have any type characteristics markedly different from the average.

Class 2 A—This group embraces the following industries:—

Alta.—Grain growing.....	Agriculture.
Ont.—Cotton goods—yarn, cloth, thread.....	} Manufacturing.
Ont.—Wire and wire goods.....	
Ont.—Hardware and tools.....	
Ont.—Sheet metal products.....	
N.B.—Pulp and paper.....	
Que.—Iron smelting, converting, refining, rolling.....	
Ont.—Brass and copper products.....	
Ont.—Boots and shoes.....	} Construction.
Que.—Rubber products.....	
Que.—Shipbuilding.....	} Transportation.
Que.—Cartage, trucking, and haulage service.....	
N.S.—Water transportation.....	} Other Services.
Ont.—Billiard halls and sporting clubs.....	
Ont.—Automobile repair service.....	
Man.—Hotels, restaurants, and taverns.....	
Alta.—Hotels, restaurants, and taverns.....	

The representative types are again, as can be seen from the list, "Manufacturing" and "Other Services."

There is, however, a notable difference in the nature of the manufactures as compared with those in the "average" class. Where the latter were "consumers'-goods" industries producing mainly semi-necessities, those in class 2 A are mostly "producers'-goods" industries or industries manufacturing "conveniences" rather than semi-necessities.

The "Other Services" are essentially the same as those in the average class.

Transportation is represented by only two industries. "Water transportation" in Nova Scotia is characterized by numbers of temporary workers (stevedores and longshoremen) and also by a well known seasonal variation in volume of business, as Halifax (which has a large proportion of the wage-earners in this industry) is a very busy shipping centre in the winter and very slack in the other seasons. Thus "Water transportation" has a higher unemployment than the main group "Transportation and Communication."

"Cartage, trucking, and haulage service" is also unrepresentative of the main group because it is typically an aggregate of small businesses with little organization or centralization. Similarly "Shipbuilding" in Quebec is not representative of the main group "Construction." This is because the demand for ships of whatever kind has little relation to the demand for building and structures, which constitute by far the greater part of the main class. The latter is tremendously cyclical, whereas shipbuilding is relatively stationary.

Agriculture is represented by "Grain growing" in Alberta, i.e., specialized farming to satisfy a foreign market. Farming under such conditions is very close to the manufacturing industries as it involves large-scale production with all its problems and is very different from the smaller "Mixed and general farming" of Quebec and Ontario in that the latter is first a home and secondly an industry. We would expect, therefore, that as farms become primarily reliant on outside markets (not necessarily foreign) for source of income, the more they are at the mercy of wavering prices and the more they are affected by crop conditions. The whole effect is to make for uncertainty of labour requirements, i.e., an increase in potential unemployment.

Class 3 A—This group being small as are, indeed, all the subsequent groups showing greater unemployment, it is difficult to say which main type is representative of the group. Therefore, we will comment briefly on each industry.

Ont.—Gardening—truck farming.....	Agriculture.
Que.—Quarries, gravel pits; salt wells.....	Mining.
Que.—Men's clothing—suits, coats.....	} Manufacturing.
Ont.—Glass and its products.....	

"Gardening—truck farming, Ont.," consists of an aggregate of market gardens growing particularly strawberries, tomatoes, and vegetables and fruit generally. The type of labour employed is considerably different from that of true "Mixed and general farming" in that there is a smaller percentage of farm labourers and a greater proportion of "gardeners" and truck drivers. In other words the farms are small industries usually supplying a nearby city with fresh vegetables and fruits. Therefore, crop failures, etc., would have a greater effect on the wage-earners, due to the specialization of the farms.

"Quarries, gravel pits; salt wells, Que.," is not representative of "mining." Unfortunately this industry is not homogeneous. The output of quarries is somewhat influenced by the condition of building construction. Gravel pits are invariably seasonally operated as well as during periods when the Provincial Government decides to extend or improve its highways, which periods may occur during good or bad years. Salt wells do not occur in Quebec.

The remaining two industries in this class are manufactures.

"Men's clothing—suits, coats, Que.," is a protected industry, but is highly seasonal in character.

"Glass and its products, Ont.," is an infant industry supplying less than half the Canadian consumption. This industry also, to a certain degree, might be affected by conditions in building construction.

Class 4 A—In this class "Building and structures" appears for the first time—representations being from Nova Scotia and New Brunswick. There are two manufactures "Women's clothing," and "Bricks and tile" both in Ontario. The "Bricks and tile" industry is notably cyclical and seasonal, as it is a feeder to "Building and construction." "Women's clothing" in Ontario, however, deserves special attention due to the tremendous variation in unemployment from the same industry in Quebec. We must bear in mind that we are dealing with the male wage-earners only—and that both of these industries have a high female content. Following are the comparative figures for the two industries shown in index form (see Statement L).

Item	Women's Clothing (Mfg.)	
	Quebec	Ontario
Age liability to unemployment (Index 2).....	94	100
Bias of June 1 (Index 3).....	119	112
Locality (Index 4).....	98	105
Female content (Index 5).....	359	299
Juvenile content (Index 7).....	199	116
Earnings (Index 8).....	109	117

We note that the Quebec industry has a more favourable age distribution, more female workers, more young male workers and a lower rate of earnings. This combination of attributes seems to indicate that the Quebec industry by selecting a younger male employee and paying lower wages was able to keep him working for a greater part of the year than the Ontario industry.

"Gardening—truck farming" in British Columbia has in general the same characteristics as that of Ontario (Class 3A).

"Quarries, gravel pits; salt wells, Ont.," has roughly the same characteristics as the same industry in Quebec (Class 3A).

Class 5 A—We have mentioned previously that "Mixed and general farming" in British Columbia is not the true type. It is influenced by the conditions governing fruit growing and as we shall show later, by an influx of agricultural workers and transients from the Prairie Provinces, the combination of which factors effect a greater unemployment than expected.

"Asbestos mining" in Quebec is nearly all for export, the principal market being the United States. As was the case with most other minerals, the production of asbestos was being reduced in 1931. The effect on the workers involved, however, was much more severe than on those engaged in metallic-mineral mining as (1) the asbestos mining region is isolated from other mining areas; (2) the workers are a resident population; (3) the industry does not support any by-products of note which might furnish work as in the case of the silver-nickel-copper mining industry.

"Sawmill products (Mfg.)" in New Brunswick is not as thriving an industry as in Ontario and British Columbia. Formerly a very important industry, a falling off under heavy competition has characterized the industry for some time. The result, plainly, is short-time operation and aggravated unemployment.

Class 6 A—New Brunswick "Forestry and logging" at best is notably seasonal in character. In addition, factors ascribed to sawmill products manufacturing in the same province are equally operative on the primary industry.

In "Fishing" in British Columbia, due to the fact that the Pacific Coast fisheries are of a far more specialized type than those of the Atlantic sea-board, there are fewer small fishermen and a greater percentage of company-owned trawlers used in catching halibut and herring. The salmon fishing also is largely controlled by the requirements of the salmon canneries. This dependence upon the activities of firms dealing in special products means that a decline in their demand would be felt more rapidly by the fishermen. In addition, fishing in British Columbia is characterized by intermittent rush and slack seasons.

Class 7 A—British Columbia "Coal mining" is well known as being peculiarly subject to shut-downs, fluctuating schedules of production and other causes making for unemployment.

Ontario "Agricultural implements (Mfg.)" owes its large unemployment mainly to the fact that Canadian farmers, particularly in the West, were unable to purchase farm machinery on the scale they had maintained up to 1929. It is a case of a capital goods manufacturing industry being faced with a virtual cessation of demand for its products. Some unemployment could result even from a slackening in the rate of increase in production, but a violent drop in output such as occurred during the period 1929-31 would be very severely felt by the wage-earner.

Nova Scotia "Iron smelting, converting, refining, rolling" has been on the decline for some years, quite apart from the depression. It is a picture of an industry barely sustaining itself, a great many plants being idle for extended periods.

Class 8 A—This class shows the greatest unemployment of all the industries in the sample. "Building and structures" are represented from Alberta and Saskatchewan and "Fish curing and packing" from British Columbia. It is notable that "Building and structures" in the Prairie Provinces has significantly more unemployment than in the Maritimes. It is explained by the rapid growth of the industry in the West being suddenly cut short. In the Maritimes there had been relatively little growth and consequently the retarding effect of the depression was less violent.

"Fish curing and packing" in British Columbia showed a decreased output in 1930 and 1931 which was the direct antithesis of a rapid growth from 1923 to 1929. The salmon canning industry was greatly affected by the unusual contraction of international trade which tremendously aggravated the normal effects of seasonal operations.

What are the main features of the industries in this class having greater than average unemployment? Primarily we may say that as a whole their function is *not* to satisfy a general demand; they produce specialties, goods which foreign countries want, goods of which the supply is elastic, or for which the demand has always been cyclical (*e.g.*, Building and structures). Some of these industries have a short history (many of our export industries are of recent importance and in this period of national self-sufficiency the foreign demand for their products in the future is most uncertain). A few are industries which show signs of gradual elimination or decline, *e.g.*, Iron smelting, etc., in Nova Scotia.

The dominant feature of the industries in this class is an uncertain demand. They may be said to represent an early stage in the evolution of the industries, that struggle which will eventually lead either to some degree of stability or to non-survival.

Now let us see how this evolutionary process has affected the working force. We find that, to obtain stability, an industry must be made efficient. This is effected by a gradual discard of obsolete occupations, a selective process to find workers with special requirements. These positions are secure because the industry can depend on the continuity of its function. But this process of selection, while attracting the desired types has in a measure closed the field to other types of workers who have been forced into less stable industries or unemployment, total or partial. Thus the existence of the three types of industry (1) average, (2) stable, (3) unstable, has created three corresponding types of unemployment. The stable industry has a relatively constant labour force, the great bulk of whom are steadily employed year in and year out. The unstable industry has a labour force which changes both in size and in its individual workers from good years to bad. The average industry has an unemployment the amount of which is determined by conditions in both the other groups. As the stable industries vary less from year to year than the unstable industries, average conditions although equally sensitive to both classes are more influenced by the unstable group than the stable.

Industries Showing Less Unemployment than the Average.—In the same way as we analysed the industries showing greater than the average unemployment we shall examine those showing less, by classes and for regional and industry group distribution. Statement LVI summarizes the situation.

LVI.—REGIONAL AND INDUSTRIAL GROUP REPRESENTATION OF THE CLASSES SHOWING LESS UNEMPLOYMENT THAN THE AVERAGE IN THE 123 INDUSTRIES OF THE SAMPLE, CANADA, YEAR ENDED JUNE 1, 1931

Group	Total Sample		Class 1B		Class 2B		Class 3B		Class 4B	
	No.	P.C. of Total	No.	P.C. of Total	No.	P.C. of Total	No.	P.C. of Total	No.	P.C. of Total
(a) REGIONAL REPRESENTATION										
TOTAL.....	122	100.0	7	100.0	28	100.0	11	100.0	12	100.0
Ontario.....	48	39.4	2	28.5	13	46.5	2	18.2	3	25.1
Quebec.....	36	29.5	3	42.9	9	32.5	4	36.3	5	41.7
British Columbia.....	12	9.8	1	14.3	1	3.5	3	27.3	1	8.3
Nova Scotia.....	7	5.7	1	14.3	2	7.0	—	—	—	—
New Brunswick.....	6	4.9	—	—	1	3.5	—	—	—	—
Manitoba.....	4	3.3	—	—	2	7.0	—	—	1	8.3
Saskatchewan.....	4	3.3	—	—	—	—	2	18.2	—	—
Alberta.....	4	3.3	—	—	—	—	—	—	1	8.3
Prince Edward Island.....	1	0.8	—	—	—	—	—	—	1	8.3
(b) INDUSTRIAL GROUP REPRESENTATION										
TOTAL.....	122	100.0	7	100.0	28	100.0	11	100.0	12	100.0
Agriculture.....	8	6.6	—	—	1	3.5	1	9.1	1	8.3
Forestry, Fishing.....	4	3.3	1	14.3	—	—	—	—	—	—
Mining, Quarrying.....	5	4.1	—	—	—	—	—	—	—	—
Manufacturing.....	42	34.3	3	42.9	9	32.5	2	18.2	—	—
Construction.....	6	4.9	—	—	—	—	—	—	—	—
Transportation and Communication.....	14	11.5	—	—	6	21.0	4	36.3	—	—
Retail Trade.....	14	11.5	1	14.3	9	32.5	—	—	—	—
Finance, Insurance.....	3	2.4	—	—	1	3.5	1	9.1	1	8.3
Service—										
Professional and Public administration.....	13	10.7	—	—	—	—	3	27.3	10	83.4
Other.....	13	10.7	2	28.5	2	7.0	—	—	—	—

Class 1B—This class is very nearly average. The main types are (1) Manufacturing and (2) Other services.

Class 2B—This class is typified in order of importance by (1) Retail Trade, (2) Manufacturing, (3) Transportation and Communication.

It will be noted that the manufactures are engaged in producing either staple food stuffs or commodities which have a very efficiently controlled schedule of production and the great majority of which are for home consumption. The "Transportation and Communication" group consists of monopolies, well organized to meet a known demand.

"Retail Trade" probably characterizes this class more than any type of industry. This type includes only establishments marketing products the majority of which have a well known demand and all of which are for local consumption. The story is one of unemployment conditions somewhat better than the average and representing the final stage in production—delivery to the consumer. It can be seen that the retail stores are thus more favourably situated than the manufacturing industries, being less violently affected by a decrease in purchasing power, as (1) they have on the average a much smaller establishment, (2) they can more readily and gradually adjust their staffs to meet business conditions. Retail stores are also more favourably situated with regard to unemployment because there is a greater mobility of the type of labour employed (largely sales clerks) than is the case in manufactures where the occupations are more or less confined to the one type of industry.

Agriculture has one representative in this class, "Mixed and general farming, N.S." Conditions governing unemployment in this industry have already been discussed (1) it is in part *true* mixed farming, (2) outlets are furnished for subsidiary employment in fishing, mining and the forest industries.

"Other Services" is represented by (1) "Laundries; laundering," (2) "Lodging and boarding houses," both in Ontario. Each of these services is characterized by a small average establishment and a steady demand for its services.

Finance is represented by "Investment and loan, Ont."

Class 3B—This class is predominantly "Transportation and Communication" and "Professional and Public administration service." Transportation and Communication is represented by "Electric railways" in Ontario and British Columbia, "Telephone systems" in Quebec and "Storage" in Saskatchewan. The first three are monopolistic public utilities, while the latter consists largely of grain elevators in which the wage-earners are largely a maintenance staff.

Public administrative service consists of "Health" in Quebec and Ontario and "Education" in Saskatchewan. The nature of these industries is apparent—a catering to a demand which is vital to the population and which is regulated largely by state and by custom.

There are two manufactures in this class. "Non-ferrous smelting and refining" and "Pulp and paper" both in British Columbia. Both of these industries show features which are exceptional to most manufactures. Non-ferrous smelting and refining is virtually confined to one large concern operating in a confined area. It is noteworthy that the time lost by the industry was spread among the employees to an unusual extent. This is in part due to the single control, the figures reflecting an attempt on the part of the management to keep a selected working force as fully employed as possible.

The pulp and paper industry in British Columbia is also somewhat unique. In 1930 there were only six establishments in the province employing in all 2,959 persons. Although largely dependent on the United States market, this demand has been continuous of recent years largely because of the alienation of the latter country's soft wood resources and to their gradual depletion. In brief, the industry is very favourably situated in regard to both a vast supply and an assured, increasing demand.

Agriculture is represented by "Dairy farming" in Quebec. Although in a sense this is specialized, in another it is not, being made up largely of small farms which verge on true "mixed and general farming," of the French-Canadian type which is more nearly self-sufficient than any other type in Canada.

Class 4B—This shows the industries having practically no unemployment. As can be seen from the statement, the class consists almost wholly of "Professional and Public administration service", notably education, religion, police and postal service. The nature of this class of industry is well known. All have a definite function to perform. This function may be compared to the production of a manufacturing industry. However, where the amount of the latter is regulated by the demand which in turn is influenced, among other factors, by the distribution of the purchasing power, the above services are subject to a steady demand reinforced by legal or traditional standardization. Therefore, the time lost by the individual worker would not be caused by severe fluctuations in the amount of the services rendered.

We might also place "Banking" in the same category for similar reasons. Banks are very highly organized and in Canada very securely established, their function being to facilitate and in some degree to control the flow of money, in our day one of the most important functions in the national economy.

"Mixed and general farming" is the dominant industry of Canada's smallest province. The conditions making for minimum unemployment are no doubt largely due to regional factors. There has been a great exodus of the rural population and practically no inflow. Towns with their attendant industries are small and few. Practically all the land available for agriculture has been utilized for some time with the result that there has been little expansion, but the excess population, particularly young people, has been taken care of through migration to other provinces. The picture is one of great stability with its concomitant a minimum unemployment among the farm wage-earners.

We now come to the observed reasons for deviations from the average. It is evident that this group as a type supply a general demand which is vital by nature, to the population. The majority, by reason of their vital nature are: (1) directly controlled by the state—education, national defence, postal service; (2) controlled by popular opinion accumulated through the years—health, religion; (3) controlled by monopoly—banking, transportation and communication. We have discussed the reason for the absence from this class of some types of farming. It is vital that the population have foods which our farms produce yet only three agricultural industries appear in the lower unemployment groups. The three which do appear supply local consumption to a greater extent than the others which are either engaged in raising a special type of produce for city markets or are engaged in producing for foreign markets.

The fact that this group of industries is protected is not always a natural cause, but in most cases has its roots in the past. Through the years there has been a "survival of the fittest" struggle among industries—a gradual weeding out of the inefficient industries. During this process some industries have become "stabilized" (i.e., by control) to meet the needs of a population, growing as the population grows and maintaining a high efficiency. This stabilizing process has resulted in a gradual elimination of surplus staff—largely by selection.

We seem to be now in a position to generalize as to (1) the nature of average unemployment on the types of industries which show this average and (2) the law or laws followed in deviations from this average.

Average Unemployment.—Considering the average industry (from the point of view of unemployment) in the abstract, there are only a limited number of conditions under which it is possible for an industry to strike the average in the scale of unemployment. These are: (1) accident, (2) the industry being really a composite *industry group*, made up of parts, each of which is in miniature one or other of the different industries of Canada. For example, an "industry" like mixed and general farming in New Brunswick could be broken up into groups of wage-earners who sometime during the year were engaged in lumbering, fishing, domestic service and so on—each in reality a small industry. These parts to approximate the average must bear the same proportion to their parent industry as the larger industries which they represent bear to industry as a whole. (3) The "average industry," although in its components not representing any of the other industries, is exposed to or sensitive to all the conditions which determine unemployment in Canada, not to any special condition. (4) The "average industry" is directly dependent upon all the other industries while the "non-average" is more or less independent (in part a modification of condition 3).

Going back now to the array of "average industries" we see that condition 1 can be ruled out because of the large number of cases involved; 2 can be largely ruled out from an examination of the particular industries falling in the category "average." The only member of these "average industries" which, if broken up into its components, would be likely to be built up of all the industries is "Mixed and general farming," N.B., which has associated industries—fishing and logging. Obviously the conditions determining the average category are 3 or 4.

Those industries which come under condition 4 are so obvious that the matter need not be laboured. Coming under condition 3 are such industries as personal services and retail trade some of which can clearly be seen to obey this condition, e.g., "Hotels, restaurants, and

taverns," while others such as the listed manufactures are not so obvious in their connection. The last mentioned as a type are more important both because they are more numerous and also because the connection is so subtle as to escape observation.

It is interesting to find in the concrete such phenomena as "average industries," *i.e.*, industries with a *true* average unemployment. Usually, often at any rate, the average is a mere abstraction, *i.e.*, (1) no particular case conforms to the average, or (2) there is an accidental average, *i.e.*, there may be one or two cases of conformity but for no apparent reason. In our data on unemployment, however, we find that the "average industries" are average for an unmistakable reason. The matter is so important that it is necessary to re-state the nature of the reasons for the "average" or deviations from the average.

1. In the first place it is evident (from an examination of the list) that industries which appear in the average group by reason of their individual characteristics (not by accident) as long as they retain these characteristics would appear in the average group in any year, good or bad.

2. In the second place a fundamental principle runs through the individuals of the average group, *viz.*, that they exist to supply the general requirements of the population of the country, but requirements limited by the purchasing power of the population as a whole, in contrast to requirements of absolute necessities which the population must have in good or bad times.

3. There is no obvious special protection or restriction either natural or imposed. There is no particular back history, *i.e.*, they are not specially protected by tradition. A case in point is a personal service such as "Barber and hairdressing shops." The requirement is long established—but people formerly performed these acts themselves and could do it again if the necessity arose. Therefore, in a year of "prosperity" people would patronize services of the above type, but during a depression would on the whole perform these acts themselves in a measure corresponding to the shrinkage in income, which on the average is an expression of the amount of unemployment.

The Hangers-On of Industry.—It would appear that it is not to changes in the industrial structure that we have to look for a cure for unemployment. The foregoing survey will show that so long as we look only upon the industry side of the question in a study of unemployment we are departing from realities. When we look at the human (*i.e.*, the worker's) side we get back to realities. We must remember that unemployment is "worker's unemployment" not the time lost by the industry. When we take this point of view it becomes apparent that the unemployed worker is not the product of any particular industry; *i.e.*, his unemployment can not be directly attributed to a definite industry. We find unemployed persons in every industry but the great bulk of them occur at one end of our chart, *viz.*, unskilled labour and those unattached to any industry. These are cast-offs from the more stable industries and those engaged in building and structures which industry is dependent not so much on the ordinary requirements of the population as on the normal activity or expansion of *all other industries*. Of the 422,076 males not at work on June 1, 1931, about two-thirds were either unskilled or engaged in building and construction, and more than this if we include such categories as juvenile or senile age groups. This amount is a minimum figure as there are many additional census classes which verge on the unskilled.

The residue (considerably less than one-third) consisting of relatively skilled workers is, after all, never a grave problem. It is the hangers-on of industry that are in the main the unemployed, *i.e.*, a *class* of worker. The question is what to do about this class. That they already constitute a large class is a fact to be faced, but so far little attention has been paid to the fact that this class is on the increase. We have contended that they have been created by the struggle of industries for stability (efficiency). These industries are, at the present time, the seasonal and cyclical ones. These, at first glance, seem to be to blame for the hanger-on class of worker. On closer inspection it seems that *some* of them create this class, while others offer work, which they would otherwise not get, to the class already created. To illustrate—some firms during seasonal rushes take on large numbers of temporary employees. If they require no particular experience from these workers they can not be said to create them, they are merely using a type of unattached worker which already exists. But, if a firm requires rush workers with special qualifications and then throws them off, by repetition of this process it is creating a group of industrial "hangers-on."

If we look at the industrial side at all in looking for a cure we should be concerned with the activities of those industries that create this class of "hangers-on."

Balance between Supply and Demand.—The foregoing analysis of industry types brings out certain interesting facts. The most significant is that industries, whose function is to satisfy a demand the Canadian consumer established by (1) tradition, (2) law, or (3) the necessity of maintaining a certain standard of living, have small unemployment. The greater the extent to which industries supply "goods" non-essential from the viewpoint of a minimum standard of living or tradition, or dependent on foreign demand, the greater their unemployment. The reason for this seems to be rooted in the development through time of a balance between production and expected consumption. Some types of industries lend themselves to this adjustment to a greater extent than others. It is noteworthy that where this balance is relatively undeveloped, in industries such as "Building and structures" and certain industries dependent on the whims of a foreign market, the high rate of unemployment is usually ascribed to the cyclical or seasonal nature of the industry *per se*. Little attention is given to the development through time of a force, acting on different industries in different degrees, which has tended to weld industries into efficiently functioning machines, this efficiency from the social viewpoint being the ability of the industry to stabilize its working force or from the economic viewpoint to produce that for which there is a demand in, as nearly as possible, the quantity demanded. This for obvious reasons is difficult to accomplish in the case of an industry depending on foreign markets; it is difficult to accomplish in the case of "Building and structures" because there is no systematic planning in this industry.

Thus, in the industries of the sample in the year 1931, we have a picture of the development of this force through time, inasmuch as we can see the extent of its action on different types of industries at that time. It is obviously a force which is still working on most industries, although in some it has already accomplished its purpose, but in the remainder the process is partial in varying degrees. As concrete examples, recognized public administrative and professional services, such as "Health," "Education," "Religion" and Government functions show the finest balance between the production and demand of services. Next in line come the public services "Transportation and Communication" and "Banking." Then come the better established forms of trade, closely followed by "Personal services." "Manufactures" vary according to this efficiency while "Agriculture" varies to the extent to which it has become industrialized. Mining, forestry and construction are the least affected by this force.

Organization.—It is at this point that we interject the idea of "organization." An industry which is able to select the type of its personnel must be so organized as to be able to exercise this control. A well organized industry, in selecting its help from a crowded labour market, is able to secure a personnel which loses very little time. (See Appendix 2 (C) showing high correlation between time lost by the industry (X_{10}) and percentage of wage-earners who lost any time ($r = .93$.)

On the other hand, those industries which are not so organized as to be able, or to consider it necessary, to select their personnel have a high rate of unemployment, low average earnings and a low female content.

Organized industries, we have shown, select a certain type of worker. The necessity for this selectivity implies first and foremost the existence of a high percentage of specialized jobs, the vast majority of which approach full-time employment. As we approach the less organized industries, we find a smaller percentage of these specialized occupations and as a concomitant more of the wage-earners losing time.

In other words, the well organized industries select the type of worker they require by offering attractive wages and a greater prospect of full-time employment.

The term "organization," as we are using it, must not be considered synonymous with that type of industrial organization which merely aims at technical improvements in plant and product. By "organization," we imply the effects on the whole working body of the process of increasing efficiency. In other words, our use of the term implies the social rather than the economic effect of this process. Thus, while "Coal mining" may have the latest improvements in plant, the most modern system of accounting, etc., from our viewpoint it is not a highly organized industry since it has not been able to maintain a stable working force or give them any assurance of permanent employment. It is interesting to note that the occupation "coal miner" (as dis-

tinguished from the industry "Coal mining") is very highly unionized or organized, but that despite this occupational organization, "organization" of the industry has not been attained. The three types of organization are illustrated here so as to show what we mean by "organization." It seems necessary, indeed, to have a definition of the term as we use it, because "organization" from the point of view of labour unions includes only the skilled; organization from the point of view of industries ignores the worker entirely, while there is no term that includes the whole working force, skilled and unskilled.

Industries in becoming efficient throw off workers who were used in the formative stage. These workers are absorbed by the unstable industries in periods of expansion to be again dropped when they contract. Therefore, we may say that the average unemployment is determined by the aggregate size and condition of the unstable industries plus a number of discarded workers who are no longer subject to anything like adequate employment even in the unstable industries (in the main, workers stating "unspecified" industrial attachment).

Since we have found that there is actually an average type of industry, it is interesting to ask some pertinent questions on the present existence of the three types, average, stable and unstable.

(1) Would it be possible to have all industries "average"? To attain this condition it would be necessary that the group, since it must represent the entire national economy, be self-contained. That is, it must contain the necessary combination of primary industries, manufactures and distribution industries. An analysis of the type "average" shows that under some condition or other, a relative self-sufficiency could be attained, but an economy would result which would be more simple, i.e., a lower standard of living. "Building and structures," "Coal and steel mining and processing" under their present set-up would not be included. On the other side of the scale, the majority of the industries showing low unemployment, under present conditions would, from the nature of their structure, be excluded from the average group. "Industries" in point are religion, education and Government services. They could only be brought up to the average by being responsible for a number of the wage-earners losing time in the unstable industries. As the workers suffering unemployment in the unstable industries are mostly unskilled or verging on that class, this class would have to be distributed among the stable industries. Could this be effected? Would it be desirable to decrease the unemployment of the unstable industries by adding to that of the stable?

It is not the purpose of this chapter to suggest remedies for unemployment. These questions are injected to bring about an appreciation of types of industrial unemployment.

Concentration of Work—A Concomitant of "Organization."—Having shown that unemployment varies largely with the degree to which the industry is "organized," we have yet to devise a satisfactory method of showing the *rating* of the industries by organization in the sample. An organized industry, as we have defined it, is one which has control of its body of workers—control in the sense of being in the position of (1) choosing the type of worker, (2) limiting the number of workers. The combined effect of these two factors means that a highly "organized"* industry contains a staff which tends to be permanently employed and which also shows small variation in its numbers. The total supply of labour being always in excess of the demand, it is obvious that only the very highly organized industries can withstand the pressure of this excess. The fact that some do, merely implies that the working structure of the industry is geared for full-time employment. The majority of industries, however, are in varying degrees elastic as to labour requirements. In periods of expansion they absorb workers which have been rejected by those industries which have been growing more efficient and they create wage-earners from "own accounts", youth, females and immigration. They have, therefore, a large wage-earning body when conditions seem to warrant expansion and in times of caution a wage-earning body which may be a mere fraction of the maximum size. In these industries, therefore, a great percentage of the wage-earners work for short periods of time but there is always a nucleus in every industry which loses no time or very little. This nucleus may be said to be the maintenance staff, a group of salaried workers, foremen and others which is retained at a nearly constant number in periods both of large and small output. In highly organized industries this "nucleus"

* The reader is again cautioned not to interpret the term "organization" as being purely and simply an expression of "efficiency" as the term is generally used, i.e., "present efficiency."

is nearly the size of the whole staff and in less organized industries shrinks to a small fraction of the whole. To emphasize this fact, we have constructed a statement showing in index form (with base all Canada) that percentage of the total weeks worked by each of the 122 industries which was worked by those losing no time (see Statement LVII). This is an expression of the concentration of the work, showing inversely to what extent an even dispersion of the total time lost has been made among the working force.

LVII.—COMPARISON OF INDICES OF (a) PERCENTAGE OF THE TOTAL TIME IN INDUSTRY WORKED BY WAGE-EARNERS LOSING NO TIME AND (b) PERCENTAGE OF TIME LOST PER WAGE-EARNER, IN THE 122 INDUSTRIES OF THE SAMPLE, CANADA, YEAR ENDED JUNE 1, 1931

Province	Industry	Index a	Province	Industry	Index b
B.C.	Coal mining.....	42	Sask.	Building and structures.....	236
N.S.	Iron smelting, converting, refining, rolling (Mfg.).....	46	Alta.	Building and structures.....	234
Que.	Asbestos mining.....	48	B.C.	Coal mining.....	212
Alta.	Building and structures.....	53	B.C.	Fish curing and packing (Mfg.).....	205
N.B.	Forestry and logging.....	53	Ont.	Agricultural implements and machinery (Mfg.).....	204
N.B.	Sawmill products (Mfg.).....	56	N.S.	Iron smelting, converting, refining, rolling (Mfg.).....	201
Sask.	Building and structures.....	57	B.C.	Fishing.....	190
N.S.	Building and structures.....	66	N.B.	Forestry and logging.....	185
N.B.	Building and structures.....	68	N.B.	Sawmill products (Mfg.).....	174
Que.	Rubber products (Mfg.).....	69	Que.	Asbestos mining.....	166
Ont.	Quarries, gravel pits; salt wells.....	69	Que.	Mixed and general farming.....	160
B.C.	Fishing.....	70	B.C.	Building and structures.....	154
Ont.	Cotton goods—yarn, cloth, thread (Mfg.).....	71	N.S.	Gardening—truck farming.....	152
Ont.	Agricultural implements and machinery (Mfg.).....	73	N.B.	Building and structures.....	147
Ont.	Woolens and worsteds (Mfg.).....	73	Ont.	Quarries, gravel pits; salt wells.....	145
Ont.	Bricks and tile (Mfg.).....	74	Ont.	Bricks and tile (Mfg.).....	143
Ont.	Women's clothing—skirts, cloaks, waists (including children's wear) (Mfg.).....	75	Que.	Glass and its products (Mfg.).....	135
Que.	Men's clothing—suits, coats (Mfg.).....	76	Que.	Men's clothing—suits, coats (Mfg.).....	132
Que.	Quarries, gravel pits; salt wells.....	78	Ont.	Gardening—truck farming.....	131
Ont.	Hardware and tools (Mfg.).....	79	Que.	Women's clothing—skirts, cloaks, waists (including children's wear) (Mfg.).....	126
Ont.	Wire and wire goods (Mfg.).....	80	Que.	Quarries, gravel pits; salt wells.....	126
Que.	Tobacco, cigars, and cigarettes (Mfg.).....	81	Alta.	Grain growing.....	124
B.C.	Fish curing and packing (Mfg.).....	81	Ont.	Cotton goods—yarn, cloth, thread (Mfg.).....	122
Ont.	Glass and its products (Mfg.).....	81	Ont.	Billiard halls and sporting clubs.....	119
Ont.	Boots and shoes (Mfg.).....	81	Ont.	Wire and wire goods (Mfg.).....	116
Que.	Shipbuilding.....	82	Ont.	Automobile repair service.....	114
Ont.	Hosiery and knitted goods (Mfg.).....	84	Ont.	Hardware and tools (Mfg.).....	114
N.B.	Pulp and paper (Mfg.).....	85	Que.	Shipbuilding.....	113
Que.	Women's clothing—skirts, cloaks, waists (including children's wear) (Mfg.).....	85	Que.	Rubber products (Mfg.).....	111
Ont.	Tanning (Mfg.).....	86	N.B.	Pulp and paper (Mfg.).....	110
Ont.	Sheet metal products (Mfg.).....	87	Que.	Iron smelting, converting, refining, rolling (Mfg.).....	110
Ont.	Brass and copper products (Mfg.).....	87	Que.	Cartage, trucking, and haulage service.....	108
B.C.	Mixed and general farming.....	88	Ont.	Sheet metal products (Mfg.).....	108
N.S.	Forestry and logging.....	89	N.S.	Water transportation.....	105
Que.	Iron smelting, converting, refining, rolling (Mfg.).....	89	Que.	Automobile repair service.....	104
Ont.	Petroleum products (Mfg.).....	89	Alta.	Brass and copper products (Mfg.).....	104
Que.	Biscuits and confectionery (Mfg.).....	89	Alta.	Hotels, restaurants, and taverns.....	104
Que.	Furniture (including upholstery) (Mfg.).....	91	Ont.	Woolens and worsteds (Mfg.).....	102
Que.	Cartage, trucking, and haulage service.....	92	Ont.	Taxicabs, livery, and bus service.....	101
Ont.	Billiard halls and sporting clubs.....	92	Man.	Boots and shoes (Mfg.).....	99
N.S.	Water transportation.....	93	Man.	Hotels, restaurants, and taverns.....	98
Que.	Automobile repair service.....	93	Que.	Women's clothing—skirts, cloaks, waists (including children's wear) (Mfg.).....	95
Alta.	Grain growing.....	93	B.C.	Hotels, restaurants, and taverns.....	94
Ont.	Gardening—truck farming.....	93	Que.	Tobacco, cigars, and cigarettes (Mfg.).....	94
Ont.	Biscuits and confectionery (Mfg.).....	93	N.S.	Forestry and logging.....	93
Ont.	Automobile repair service.....	94	Que.	Coal and wood (Retail Trade).....	93
Ont.	Coal and wood (Retail Trade).....	95	Que.	Hosiery and knitted goods (Mfg.).....	92
Que.	Coal and wood (Retail Trade).....	95	Que.	Furniture (including upholstery) (Mfg.).....	86
B.C.	Gardening—truck farming.....	96	Ont.	Coal and wood (Retail Trade).....	85
B.C.	Non-ferrous smelting and refining (Mfg.).....	96	Que.	Taxicabs, livery, and bus service.....	85
Alta.	Hotels, restaurants, and taverns.....	96	N.B.	Mixed and general farming.....	84
N.B.	Mixed and general farming.....	99	Ont.	Tanning (Mfg.).....	84
Ont.	Paper products—boxes, bags, stationery (Mfg.).....	99	Ont.	Liquors, beverages (not aerated waters) (Mfg.).....	83
Man.	General and departmental (Retail Trade) (Mfg.).....	100	Ont.	Biscuits and confectionery (Mfg.).....	82
Ont.	Liquors, beverages (not aerated waters) (Mfg.).....	100	Ont.	Nickel-copper mining and milling.....	81
Ont.	Taxicabs, livery, and bus service.....	101	Ont.	Storage.....	79
Que.	Nickel-copper mining and milling.....	102	Sask.	Hotels, restaurants, and taverns.....	78
Que.	Taxicabs, livery, and bus service.....	102	Ont.	Meat, poultry, and fish (Retail Trade).....	76
Ont.	Storage.....	102	Man.	General and departmental (Retail Trade).....	75
Man.	Hotels, restaurants, and taverns.....	103	Ont.	Filling stations (Retail Trade).....	75
Que.	Boilers, engines, and machinery (Mfg.).....	103	Ont.	Non-ferrous smelting and refining (Mfg.).....	74
Que.	Silk, silk goods (including artificial silk) (Mfg.).....	104	Que.	Boilers, engines, and machinery (Mfg.).....	71
			Ont.	Barber and hairdressing shops.....	71

LVII.—COMPARISON OF INDICES OF (a) PERCENTAGE OF THE TOTAL TIME IN INDUSTRY WORKED BY WAGE-EARNERS LOSING NO TIME AND (b) PERCENTAGE OF TIME LOST PER WAGE-EARNER, IN THE 122 INDUSTRIES OF THE SAMPLE, CANADA, YEAR ENDED JUNE 1, 1931—Con.

Province	Industry	Index a	Province	Industry	Index b
Que.	Electrical apparatus (Mfg.)	105	N.S.	Fishing	70
Ont.	Slaughtering and meat packing (Mfg.)	105	Ont.	Paper products—boxes, bags, stationery (Mfg.)	69
N.S.	Steam railways	105	Ont.	Slaughtering and meat packing (Mfg.)	68
N.S.	Fishing	105	B.C.	Printing, publishing, and bookbinding	65
Ont.	Non-ferrous smelting and refining (Mfg.)	107	B.C.	General and departmental (Retail Trade)	64
Ont.	Filling stations (Retail Trade)	107	Que.	Meat, poultry, and fish (Retail Trade)	64
B.C.	Hotels, restaurants, and taverns	108	Que.	Bread and other bakery products (Mfg.)	62
Ont.	Meat, poultry, and fish (Retail Trade)	108	Que.	Barber and hairdressing shops	60
N.S.	Mixed and general farming	108	Ont.	Petroleum products (Mfg.)	59
Ont.	Flour and grain milling	108	N.S.	Mixed and general farming	59
B.C.	Pulp and paper (Mfg.)	108	Que.	Electrical apparatus (Mfg.)	58
N.B.	Steam railways	109	Man.	Printing, publishing, and bookbinding	58
Que.	Electric railways	109	Ont.	Illuminating and fuel gas (Mfg.)	58
Que.	Meat, poultry, and fish (Retail Trade)	110	N.S.	Steam railways	57
Que.	Electric railways	110	Ont.	Lodging and boarding houses	56
Que.	Bread and other bakery products (Mfg.)	111	Ont.	Automobiles and accessories (Retail Trade)	56
Ont.	Butter, cheese, and condensed milk (Mfg.)	111	Ont.	Investment and loan	55
Ont.	Telephone systems	112	Que.	Biscuits and confectionery (Mfg.)	53
Que.	Liquors, beverages (not aerated waters) (Mfg.)	112	Ont.	Private domestic service	53
Ont.	Illuminating and fuel gas (Mfg.)	112	Ont.	Drugs and toilet preparations (Retail Trade)	53
Sask.	Hotels, restaurants, and taverns	113	Ont.	Hardware and builders' supplies (Retail Trade)	53
Ont.	Printing, publishing, and bookbinding	113	Que.	Flour and grain milling	53
Ont.	Barber and hairdressing shops	113	Ont.	General and departmental (Retail Trade)	52
B.C.	General and departmental (Retail Trade)	113	Ont.	Laundries; laundering	52
Man.	Printing, publishing, and bookbinding	113	Que.	Silk, silk goods (including artificial silk) (Mfg.)	52
Que.	Barber and hairdressing shops	114	Ont.	Butter, cheese, and condensed milk (Mfg.)	51
Ont.	Hardware and builders' supplies (Retail Trade)	114	Ont.	Telegraph systems	47
Que.	Telephone systems	115	N.B.	Steam railways	47
Que.	General and departmental (Retail Trade)	115	Que.	Hardware and builders' supplies (Retail Trade)	47
Que.	Electric light and power production and distribution	115	Que.	Private domestic service	46
Ont.	Automobiles and accessories (Retail Trade)	115	Ont.	Dairy products (Retail Trade)	46
Ont.	Laundries; laundering	115	Que.	Electric railways	45
Ont.	Dairy products (Retail Trade)	115	Que.	Dairy products (Retail Trade)	45
Ont.	Telegraph systems	116	Que.	Electric light and power production and distribution	44
Que.	Lodging and boarding houses	117	B.C.	Non-ferrous smelting and refining (Mfg.)	43
Que.	Hardware and builders' supplies (Retail Trade)	117	Que.	Liquors, beverages (not aerated waters) (Mfg.)	42
Ont.	Drugs and toilet preparations (Retail Trade)	118	B.C.	Pulp and paper (Mfg.)	41
B.C.	Electric railways	118	Que.	Investment and loan	40
Que.	Dairy products (Retail Trade)	118	Ont.	Electric railways	40
Ont.	Private domestic service	119	Ont.	Telephone systems	39
Que.	Private domestic service	120	Que.	Dairy farming	37
Ont.	Investment and loan	122	B.C.	Electric railways	36
Que.	Dairy farming	122	Ont.	Health	34
Sask.	Health	122	Que.	Telephone systems	31
Sask.	Storage	125	Sask.	Education	28
Que.	Investment and loan	125	Sask.	Storage	28
Que.	Health	125	B.C.	Education	28
P.E.I.	Mixed and general farming	125	Que.	Health	26
Sask.	Education	128	Man.	Education	26
Alta.	Education	129	Alta.	Education	25
B.C.	Education	129	P.E.I.	Mixed and general farming	20
Que.	Police (Municipal)	129	Que.	Banking	16
Man.	Education	130	Que.	Education	13
Que.	Postal service	130	Que.	Postal service	12
Que.	Banking	131	Que.	Police (Municipal)	11
Que.	Education	131	Ont.	National defence	11
Ont.	National defence	131	Ont.	Police (Municipal)	11
Ont.	Police (Municipal)	131	Ont.	Religion	8
Ont.	Religion	133	Que.	Religion	7
Que.	Religion	133			
	All-Canada rate=73.5 p.e. Maximum possible index=136			Mean..... 83 (15-27 p.e.) All-Canada rate=18.35 p.e.	

This index of "concentration of work" was correlated with an index of the percentage of time lost during the year. The correlation as expected, was very high ($r = .91$). There were, however, certain industries which did not comply with the observation that the concentration of the work varied as the percentage of time lost of the working year. That is, when the percentage time lost was computed from the concentration, while in the great majority of cases there was a good fit, some industries showed a computed figure which was in some cases significantly higher and in some cases significantly lower than the actual percentage time lost during the year.

The following industries diverge significantly from the observed rule, i.e., the less time lost by the industry, the less the time lost is spread among the wage-earners. In this instance wage-earners are both male and female.

ACTUAL PERCENTAGE OF TIME LOST COMPUTED FROM CONCENTRATION

Computed Time Lost Less than Actual			Computed Time Lost Greater than Actual		
Province	Industry	Index	Province	Industry	Index
B.C.	Fish curing and packing (Mfg.)	80	Que.	Biscuits and confectionery (Mfg.)	54
Ont.	Agricultural implements and machinery (Mfg.)	62	B.C.	Non-ferrous smelting and refining (Mfg.)	49
B.C.	Gardening—truck farming	60	Ont.	Petroleum products (Mfg.)	48
Sask.	Building and structures	59	Ont.	Boots and shoes (Mfg.)	46
B.C.	Mixed and general farming	51	Que.	Rubber products (Mfg.)	40
Alta.	Building and structures	48	Ont.	Woolens and worsteds (Mfg.)	40
B.C.	Fishing	41	Ont.	Hardware and tools (Mfg.)	35
Ont.	Gardening—truck farming	33	Que.	Tobacco, cigars, and cigarettes (Mfg.)	33
B.C.	Hotels, restaurants, and taverns	29	Que.	Asbestos mining	31
Alta.	Grain growing	26	Ont.	Wire and wire goods (Mfg.)	31
Sask.	Hotels, restaurants, and taverns	23	Ont.	Tanning (Mfg.)	30
Man.	Hotels, restaurants, and taverns	22	Que.	Shipbuilding	29
			N.B.	Pulp and paper (Mfg.)	26
			Ont.	Hosiery and knitted goods (Mfg.)	25
			Ont.	Cotton goods—yarn, cloth, thread (Mfg.)	25
			B.C.	Pulp and paper (Mfg.)	24
			Que.	Silk, silk goods (including artificial silk) (Mfg.)	22

All numbers are given in index form. To convert into percentage time lost during year—index 100 = 18.35 p.e. (9.54 weeks); standard error = 20.8 or 3.82 p.e. of the year (2.00 weeks).

LVIII.—PERCENTAGE OF YEAR LOST, TOTAL AND FEMALE WAGE-EARNERS IN INDUSTRIES SHOWING GREATER AND LESS AVERAGE TIME LOST THAN WARRANTED BY THE SPREAD OF UNEMPLOYMENT, 1931, WITH THE AVERAGE YEARLY EMPLOYMENT FROM THE CENSUS OF MANUFACTURES, 1924, 1928 AND 1930

Province	Industry	P.C. Time Lost	Wage-Earners 1931		Average Yearly Employment, Census of Manufactures		
			Total	Female	1924	1928	1930
AVERAGE TIME LOST GREATER THAN WARRANTED							
B.C.	Fish curing and packing (Mfg.).....	14.6	3,556	556	2,848	7,176	3,574
Ont.	Agricultural implements and machinery (Mfg.).....	11.4	5,390	136	6,322	10,287	7,053
B.C.	Gardening—truck farming.....	11.0	2,167	31	—	—	—
Sask.	Building and structures.....	10.8	5,039	23	—	—	—
B.C.	Mixed and general farming.....	9.4	6,092	101	—	—	—
Alta.	Building and structures.....	8.8	5,178	39	—	—	—
B.C.	Fishing.....	7.5	3,047	18	—	—	—
Ont.	Gardening—truck farming.....	6.0	3,236	36	—	—	—
B.C.	Hotels, restaurants, and taverns.....	5.3	8,491	2,602	—	—	—
Alta.	Grain growing.....	4.8	2,121	89	—	—	—
Sask.	Hotels, restaurants, and taverns.....	4.2	3,762	1,527	—	—	—
Man.	Hotels, restaurants, and taverns.....	4.0	4,878	2,137	—	—	—

AVERAGE TIME LOST LESS THAN WARRANTED

Que.	Biscuits and confectionery (Mfg.)	9.9	3,328	1,317	2,800	3,461	3,358
B.C.	Non-ferrous smelting and refining (Mfg.)	9.0	3,311	55	—	—	—
Ont.	Petroleum products (Mfg.)	8.8	3,058	191	1,603	1,894	2,482
Ont.	Boots and shoes (Mfg.)	8.4	4,878	1,565	4,231	5,106	4,561
Que.	Rubber products (Mfg.)	7.3	4,245	1,370	3,488	5,362	5,320
Ont.	Woolens and worsteds (Mfg.)	7.3	5,523	2,467	3,861	3,008	2,816
Ont.	Hardware and tools (Mfg.)	6.4	3,001	301	3,779	4,850	4,560
Que.	Tobacco, cigars, and cigarettes (Mfg.)	6.0	6,176	3,280	1,887	1,788	2,673
Que.	Asbestos mining	5.7	2,810	23	2,382	3,301	2,770
Ont.	Wire and wire goods (Mfg.)	5.7	2,878	300	1,521	1,882	2,182
Ont.	Tanning (Mfg.)	5.5	2,482	170	3,168	3,245	2,530
Que.	Shipbuilding	5.3	2,708	12	—	—	—
N.B.	Pulp and paper (Mfg.)	4.8	2,729	89	1,241	1,329	2,469
Ont.	Hosiery and knitted goods (Mfg.)	4.8	7,058	4,337	10,351	12,714	12,940
Ont.	Cotton goods—yarn, cloth, thread (Mfg.)	4.6	4,602	1,975	3,983	5,129	4,238
B.C.	Pulp and paper (Mfg.)	4.4	2,025	83	2,354	2,855	2,656
Que.	Silk, silk goods (including artificial silk) (Mfg.)	4.0	5,802	2,431	912	1,925	3,662

¹ Not available—less than three establishments.

Before analysing these differences it would be well to define (1) "Computed Time Lost Less than Actual," (2) "Computed Time Lost Greater than Actual." With regard to the first group we may say that the actual time lost is more than is warranted by the extent to which the unemployment is spread among the wage-earners and with regard to the second group the reverse condition exists.

These industries depart from an observed tendency for the time lost by the industry to bear a constant relation to the extent to which the existing time lost is apportioned among the wage-earners.

In group 1 those wage-earners losing time remain idle for an exceptionally long time. From the nature of census data this condition could exist because of one or both of two factors: (a) The first, the inclusion of numerous rejects from other industries who picked up only the occasional week's work and who probably do not attach themselves steadily to this industry. Industries of this sort are given a worse appearance than they deserve because of this accumulation of temporary adherents. (b) The second factor is, of course, the condition which causes an industry to discharge many of its *regular* workers because of retarded output or paradoxically increased output obtained by mechanization, etc. It will be noticed at once that class 1 is industries connected with export of fish and agricultural products, construction or hotels, restaurants and taverns. In every case, they are industries which are dependent on a fluctuating market. Fish and grain for example are at the mercy not only of foreign tariff policies, but also of a varying supply. The construction industry is by nature cyclical while the volume of business done by hotels and restaurants is vastly affected by the amount of spare cash in the hands of the consumer.

It is noteworthy that "Mixed and general farming" does not occur in this class. Only such farming appears as is specialized, i.e., which depends on an outside market to absorb its product. The inference is that when the farm is used to supply, in the main, the wants of the farmer, it does not appear in this class.

It can be stated with a degree of certainty, however, that these industries show a greater unemployment than is warranted by the dispersion of the work, because they are not organized to withstand the pressure of unemployed persons who have either not been able to find employment in more highly organized industries or who have been discarded in the evolution of those industries.

Of special interest are the two manufacturing industries appearing in this class: (1) "Fish curing and packing" in British Columbia; (2) "Agricultural implements and machinery" in Ontario. The numbers employed, as can be seen from Statement LVIII were enormously increased during the period 1924-28 but in 1930 fell back to nearly the 1924 level. Again the inference is that wage-earners were created only to be left without work when it became obvious that the rate of production was outstripping the ability of the consumer to buy. In the census figures of 1931, a great many people still reported themselves as ordinarily employed in industries to which they had been formerly attached although many of them had had no employment during the year previous to the enumeration. As far as the industries are concerned, these people are not connected with them any longer. It is obvious that this fact would increase the unemployment and *pari passu* increase the concentration of working time of that industry.

Let us now consider class 2 where the time worked is spread among the wage-earners to a greater extent than in the case of other industries showing equal unemployment. We note immediately that all but 4 of the 17 are home-consumption industries, also that the numbers employed in the years 1924, 1928 and 1930 either showed gradual increases or remained nearly stationary. Clearly these industries are all organized to meet a demand the extent of which has been gauged and where production has been regulated to just keep pace with the demand.*

The picture given is that of an industry having a relatively constant labour force where the time lost is spread among its wage-earners. In the case of two industries, viz., "Non-ferrous smelting and refining (Mfg.)" in British Columbia and "Petroleum products (Mfg.)" in Ontario, it is known that it is the policy of several of the larger companies engaged in these industries to select and retain as long as possible their entire working force, enabling the workers to retain their connection with the industry by giving part-time work†—in other words spreading the time lost.

* The fact that several of these industries have been aided in securing a stable market by protective tariffs does not change or affect the pertinence of this discussion.

† In this connection it should be understood that "part-time work" means work given to persons considered by the industry as part of the staff, not seasonal work or odd jobs given to any corner. A great deal of misunderstanding arises from confusing these two kinds of workers.

Be it noted, however, that those industries are exceptions to an observed tendency—they are not the rule.* The rank and file of industries showing comparable amounts of time lost do not spread the working time. Those losing time are ordinarily out of work for a long time and the fewer losing time in an industry, the longer they are out of work†.

In Statement LIX we have constructed a rating of industries by "organization" as it affects the worker. The criterion of "organization" being "the maximum spread of work consistent with the minimum of time lost." This rating was formed by obtaining the product of (1) average weeks lost by all wage-earners; (2) average weeks lost by wage-earners losing time. It will be noted that this rating of organization, by placing an emphasis on the spread of employment, has changed the order derived from any previous criterion.‡

As an addenda to this rating by organization we are inserting the rating of the "Unspecified" class of industry—the object being to show how completely *unorganized* these groups are when compared even with the worst of the industries in the sample.

* It will be noted that in the textile industries and others represented in this class, a high percentage of the wage-earners are women, among whom the average duration of time lost is less than for males. This spread of employment is aided by the direct break from wage-earners status when females marry.

† In the following chapter it will be shown that occupations show this condition much more markedly than do industries.

‡ A more refined measurement of the effect of various types of industrial unemployment showing (1) the probability of the worker losing time (2) the probability of his regaining employment, appears in Chapter XI, special treatment being accorded the 122 industries in the sample used in this chapter.

LIX.—INDUSTRIES OF THE SAMPLE RANKED ACCORDING TO THE EXTENT TO WHICH UNEMPLOYMENT IS SPREAD COMMENSURATE WITH THE TIME LOST, CANADA, YEAR ENDED JUNE 1, 1931

Province	Industry	Rating ¹
Sask.	Building and structures.....	572
Alta.	Building and structures.....	572
B.C.	Fish curing and packing (Mfg.).....	532
Ont.	Agricultural implements and machinery (Mfg.).....	494
B.C.	Coal mining.....	440
B.C.	Fishing.....	432
N.S.	Iron smelting, converting, refining, rolling (Mfg.).....	418
B.C.	Mixed and general farming.....	375
B.C.	Gardening—truck farming.....	364
N.B.	Forestry and logging.....	357
N.B.	Sawmill products (Mfg.).....	336
Ont.	Gardening—truck farming.....	306
Que.	Asbestos mining.....	285
N.S.	Building and structures.....	280
N.B.	Building and structures.....	266
Ont.	Bricks and tile (Mfg.).....	260
Ont.	Glass and its products (Mfg.).....	252
Ont.	Quarries, gravel pits; salt wells.....	247
Alta.	Grain growing.....	242
Ont.	Billiard halls and sporting clubs.....	231
Que.	Quarries, gravel pits; salt wells.....	228
Que.	Men's clothing—suits, coats (Mfg.).....	228
Ont.	Women's clothing—skirts, cloaks, waists (including children's wear) (Mfg.).....	228
Ont.	Automobile repair service.....	210
N.S.	Water transportation.....	200
Que.	Cartage, trucking, and haulage service.....	200
Ont.	Wire and wire goods (Mfg.).....	198
Ont.	Taxicabs, livery, and bus service.....	198
Man.	Hotels, restaurants, and taverns.....	198
N.B.	Pulp and paper (Mfg.).....	190
Ont.	Sheet metal products (Mfg.).....	190
Que.	Iron smelting, converting, refining, rolling (Mfg.).....	190
Alta.	Hotels, restaurants, and taverns.....	185
Ont.	Cotton goods—yarn, cloth, thread (Mfg.).....	185
B.C.	Hotels, restaurants, and taverns.....	184
Que.	Shipbuilding.....	180
Que.	Automobile repair service.....	180
Ont.	Hardware and tools (Mfg.).....	180
Ont.	Brass and copper products (Mfg.).....	162
Sask.	Hotels, restaurants, and taverns.....	161
Que.	Rubber products (Mfg.).....	160
Que.	Women's clothing—skirts, cloaks, waists (including children's wear) (Mfg.).....	153
Que.	Coal and wood (Retail Trade).....	152
N.B.	Mixed and general farming.....	152
Ont.	Meat, poultry, and fish (Retail Trade).....	147
Ont.	Coal and wood (Retail Trade).....	144
Que.	Taxicabs, livery, and bus service.....	144
Ont.	Boots and shoes (Mfg.).....	144
Ont.	Non-ferrous smelting and refining (Mfg.).....	140
Ont.	Filling stations (Retail Trade).....	140

¹ This rating is obtained by multiplying the average number of weeks lost by all wage-earners in the industry by the average number of weeks lost by wage-earners losing time.

LIX.—INDUSTRIES OF THE SAMPLE RANKED ACCORDING TO THE EXTENT TO WHICH UNEMPLOYMENT IS SPREAD COMMENSURATE WITH THE TIME LOST, CANADA, YEAR ENDED JUNE 1, 1931—Con.

Province	Industry	Rating ¹
Que.	Furniture (including upholstering) (Mfg.)	130
N.S.	Forestry and logging	130
Ont.	Woolens and worsteds (Mfg.)	135
Ont.	Nickel-copper mining and milling	133
Ont.	Hosiery and knitted goods (Mfg.)	128
Ont.	Storage	126
Ont.	Liquors, beverages (not aerated waters) (Mfg.)	126
B.C.	Printing, publishing, and bookbinding	126
B.C.	General and departmental (Retail Trade)	128
Ont.	Barber and hairdressing shops	126
Ont.	Tanning (Mfg.)	120
Que.	Tobacco, cigars, and cigarettes (Mfg.)	120
Man.	General and departmental (Retail Trade)	119
Que.	Barber and hairdressing shops	115
Ont.	Investment and loans	115
Que.	Meat, poultry, and fish (Retail Trade)	114
N.S.	Biscuits and confectionery (Mfg.)	112
Ont.	Fishing	108
Ont.	Slaughtering and meat packing (Mfg.)	108
Que.	Boilers, engines, and machinery (Mfg.)	108
Ont.	Lodging and boarding houses	105
Ont.	Private domestic service	105
Ont.	Drugs and toilet preparations (Retail Trade)	105
Ont.	Automobiles and accessories (Retail Trade)	100
Ont.	Paper products—boxes, bags, stationery (Mfg.)	98
Que.	Bread and other bakery products (Mfg.)	95
Man.	Printing, publishing, and bookbinding	95
Ont.	Illuminating and fuel gas (Mfg.)	90
Ont.	Hardware and builders' supplies (Retail Trade)	90
N.S.	Mixed and general farming	85
Que.	Private domestic service	84
Ont.	Flour and grain milling	80
Que.	Electrical apparatus (Mfg.)	80
N.S.	Steam railways	80
Ont.	Laundries; laundering	76
Que.	Dairy products (Retail Trade)	76
Que.	General and departmental (Retail Trade)	72
Que.	Hardware and builders' supplies (Retail Trade)	72
Ont.	Telegraph systems	72
Que.	Investment and loans	69
Que.	Electric light and power production and distribution	68
Ont.	Dairy products (Retail Trade)	68
Ont.	Butter, cheese, and condensed milk (Mfg.)	64
Que.	Liquors, beverages (not aerated waters) (Mfg.)	64
Ont.	Petroleum products (Mfg.)	60
N.B.	Steam railways	60
Que.	Dairy farming	60
Que.	Silk, silk goods (including artificial silk) (Mfg.)	56
Que.	Electric railways	56
Que.	Biscuits and confectionery (Mfg.)	55
Ont.	Health	54
Man.	Education	50
B.C.	Electric railways	48
B.C.	Education	48
Sask.	Education	48
Alta.	Education	44
B.C.	Pulp and paper (Mfg.)	42
Ont.	Telephone systems	42
Ont.	Electric railways	42
B.C.	Non-ferrous smelting and refining (Mfg.)	40
Que.	Health	36
Sask.	Storage	32
Que.	Telephone systems	26
Que.	Banking	20
Que.	Education	18
Ont.	Police (Municipal)	17
Ont.	National defence	17
P.E.I.	Mixed and general farming	15
Que.	Postal service	15
Que.	Police (Municipal)	14
Que.	Religion	10
Ont.	Religion	10

LX.—RATING OF UNSPECIFIED INDUSTRY GROUPS IN EACH PROVINCE ACCORDING TO THE
EXTENT TO WHICH UNEMPLOYMENT IS SPREAD COMMENSURATE WITH
THE TIME LOST, CANADA, YEAR ENDED JUNE 1, 1931

Province	Wage-Earners		Weeks Lost			Rating (product of Cols. 4 and 5)
	Total	Losing Time	Total	Average by		
				All Wage- Earners	Wage- Earners Losing Time	
	(1)	(2)	(3)	(4)	(5)	(6)
Prince Edward Island.....	1,245	706	17,607	14	24	336
Nova Scotia.....	10,361	6,939	187,784	18	27	486
New Brunswick.....	15,430	10,352	266,829	19	25	475
Quebec.....	53,255	38,142	1,107,470	21	29	609
Ontario.....	46,892	36,160	1,174,983	25	32	800
Manitoba.....	11,856	9,651	333,343	28	34	952
Saskatchewan.....	9,047	7,158	234,650	25	32	800
Alberta.....	7,075	5,667	188,705	26	33	833
British Columbia.....	15,750	12,432	439,867	27	35	945

It will also be noted that in these industries there is a greater dispersion than in most of the industries in the sample. This must not be taken to mean that these groups are well off because of this dispersion. The other side of the picture is the break-down shown by the tremendous amount of time lost by the whole group. Our contention is that *dispersion is a good condition when (1) the group among which the work is spread remains intact; (2) the total time lost by the industry is of an amount which, if evenly distributed among the wage-earners, would cause no undue individual hardship.** The unspecified groups, and a decreasing proportion as one proceeds from the least to the best organized industries, do not subscribe to either of these conditions—their content *varying with conditions in industry as a whole*, the average time lost by all members of the group being nearly six months of the working year.

It is of interest that there is apparently a considerable variation in unemployment and spread of unemployment increasing roughly from east to west.

It will be noted that the provinces showing low rates of both are areas which have been affected by an exodus of the population to large urban centres and elsewhere. These areas have no large cities with the result that many workmen of unspecified industrial attachment have drifted to large cities in other provinces. The Maritime Provinces, however, do not seem to subscribe to this trend. Their population left in great numbers years ago to homestead in the Prairie Provinces or to reside in British Columbia and the Eastern United States. Industrial specialization is less intense in the Maritime Provinces, the "unspecified" worker being in a position to turn his hand to a number of occupations, farming, fishing, fruit packing and shipping, and lumbering, often being followed by one individual in the course of a single year.

This condition reflects special characteristics in the region different from the rest of Canada.

Referring to the West, we find that Saskatchewan and Alberta show less unemployment among the "unspecified" class, than do Manitoba and British Columbia. This condition indicates an inflow into the cities of Winnipeg and Vancouver from Alberta and Saskatchewan, the result of the failure of grain farming and industries dependent on it. The point is that the *greater unemployment in British Columbia and Manitoba can not be attributed directly to industrial conditions in these two provinces but is in part due to urban absorption of workers thrown off by industries in Saskatchewan and Alberta.*

Concluding Observations.—The essential point brought out by this study is that unemployment as it affects the worker is a different story when gathered from census data than when gathered from periodic reports of employment furnished by firms. In the census, we are given information which is not available in reports on payroll personnel from month to month, *viz.*, the numbers of unemployed workers who consider themselves still connected with specific industries. Many economists seem to neglect the importance attached to this figure—perhaps because such figures are available only every ten years. This means, in essence, that two factors which are of prime importance to the individual worker are being overlooked or guessed at, *viz.*, (1) duration of unemployment, (2) dislocation of definite industrial attachment. In other words,

*See index of rigidity of industries and related material in Chap. XI.

current economic practice is to interpret unemployment (a problem connected intimately with units of the population not the industry) from the viewpoint of the industry. Is this logical? It seems that many economists are not recognizing the wage-earners' side of the question at all when talking of unemployment. When an industry shows a smaller number on the payroll this month than last they recognize that the shrinkage roughly measures unemployment but seem to refuse to recognize that in addition to this shrinkage there are workers who regard themselves as being still connected with this industry who are not employed either of these months. As pointed out previously, industries, with few exceptions, disown anyone who is not actually working for them at the moment. There is much confusion of thought on the subject of unemployment arising from the fact that economists take this attitude of the industry in interpreting current data. One example will illustrate, "Fish curing and packing" in British Columbia. According to the Census of Manufactures the average numbers employed on the monthly payrolls in the calendar years 1924, 1930 and the year ended June 1, 1931 were as follows:—

1924.....	2,848	
1928.....	7,176; + 4,328	Differences
June 1, 1930 to June 1, 1931.....	1,348; - 5,828	

During the period 1924-28 the number of wage-earners was increasing in nearly all industries. Therefore, it is logical to assume that the wage-earner increase in the industry was drawn not from wage-earners employed in other industries but was created largely from "own accounts," young persons and immigrants.

Now let us compare the census figures of unemployed during the year previous to June 1, 1931. We find that 3,556 wage-earners reported themselves as connected with this industry, of whom 1,319 lost no time, i.e., less than one week. This is a figure comparable to the number reported on the average monthly payroll. But what of the remaining 2,237? Census figures show that the average weeks worked by this group was 23. But it must be remembered that, of necessity, only a fraction of this time was work in connection with the parent industry. This is shown by the average yearly earnings per piece-worker (an aggregate of rush workers not reported on the payrolls individually) which comes to \$150—which figure, at \$7.50 per week, would give 20 weeks of work per piece-worker. To make up this average there are, of course, many wage-earners working practically no time during the year.

In accounting for the 5,828 wage-earners thrown out between 1928 and 1931, we may say that 2,237 still consider themselves attached to the industry although obviously the same view is not held by the industry. The rest were no doubt either on relief or, in the case of a few, engaged in own account operations. Very few had been absorbed by other industries as all industries were throwing off wage-earners.

Does not this indicate that the class losing no time was an entirely different group from those who lost time?

It has been said that if the loss of time were spread among the workers, we would still have unemployment. True, but many workers losing say 10 weeks in the year could conceivably save enough to tide them over those 10 weeks—whereas half that number losing 20 weeks could not. They would have to receive relief and also would tend to drift away from a definite industrial attachment.

Is this tendency to segregate the working population into two groups (1) with unspecified industrial attachment and (2) definitely connected with a specific industry, a desirable thing? The answer is all too plainly shown in the duration of unemployment among those losing time.

Our observations have indicated that the dispersion of unemployment, which is made up of durations of unemployment of individual workers, occurs in a manner indicating a trend to increasing differences in these individual durations as a result of an intense industrial selection.

Current theories of unemployment are mainly concerned with "real wages," price fluctuations and other criteria which have to do with business cycles. The argument is often advanced that a person employed 8 months of the year in many cases earns more during the year than a person working the full year at "marginal" or "sub-marginal" wages, and, therefore, is better off although the duration of unemployment is 4 months as against none. If this were true, and not confined

to exceptions, admittedly the duration of unemployment could be discarded as being of no moment. What are the facts? We find, in taking all male wage-earners from 40 selected occupations in each province for 1931, that there was a *marked* correlation between the *average earnings per week worked* and the *weeks worked during the year*.^{*} This means that the person working the full year worked at a higher average salary or wage than a person who lost time, and the fewer the weeks worked, the lower the rate of earnings.

This fact has been substantiated by a similar correlation between average earnings per week worked and average time lost by the 122 industries in the sample with which we have dealt.

This means that the duration of unemployment is directly reflected in dollars and cents, *i.e.*, the purchasing power of the individual worker. Concentration in employment therefore means concentration of consumption or purchasing power. This concentration undoubtedly has been aided by policies of monopolies, the restrictions of trade unions and the immobility of labour. Faulty workings of monetary mechanisms and of savings investment have their place in the general disruption of the attempts of the working population to give themselves sustenance. Reforms in this connection are no doubt desirable but, if accomplished would they significantly lower the time lost by the individual worker, the dispersion and duration of which is the real criterion of unemployment?

PART C—SPECIAL INCIDENCES OF UNEMPLOYMENT

Significance of Seasonality.—It will no doubt be thought that we have neglected to consider the influence of seasonal fluctuations upon unemployment. This omission has not been voluntary. When dealing with individual industries the only measure of seasonality obtainable is a comparison of the unemployment on June 1 as compared with the unemployment over the preceding year. It has been shown that this is really useless, because it indicates not only seasonality but the extent to which industrial conditions have been subject to an upward or a downward trend during the year considered, and also because the data does not show the monthly fluctuations.

To study the significance of this seasonality of certain industries which is so marked in Canada, it was found necessary to resort to the broad industrial classes which are used in the Dominion Bureau of Statistics' monthly index of employment.

As can be seen from Appendix 3 the industrial groups are, in the first place, not homogeneous to the same extent as the ones used in our sample. Secondly, agricultural industries are not represented. For those groups given, however, we can obtain the monthly figures of employment shown in the form of an index with the average of 1926 as a base. From these monthly figures an index of fluctuation was constructed as follows:—

The monthly figures of employment were found for each industry during the years 1929, 1930 and 1931. The mean and standard deviation of the monthly figures were calculated separately for each of the three years. The ratio represented by the standard deviation squared divided by the mean squared was averaged for the three years, and the coefficient of fluctuation expressed by the square root of this average.

As a base for the index, a similar coefficient was obtained for all industries in Canada except agriculture. This index then really represents the seasonality as based upon the average monthly fluctuation during the three years, including, and prior to the census year. The method of obtaining an index of seasonality can and should be criticized because it does not represent pure seasonality but is really an index of fluctuation composed of two elements, seasonality and the prevailing downward trend of employment, although the trend is partially eliminated by averaging the three years. However, it is deemed sufficient to indicate the relative seasonality of the period under consideration. This index is shown in Appendix 3, together with indices for 30 industries representing unemployment during the year ending June 1, 1931, female content, average earnings per week worked and age liability to unemployment. The data for the latter four indices was obtained from the 1931 Census material, and as such, the industry groups, though not quite identical with the groups furnished by the Monthly Index of Employment, are sufficiently alike to allow for this comparison.

^{*} See Memorandum *re the Earning Power of Canadian Male and Female Workers, by Ages*, p. 18, based on data collected in the Census of 1931, published by the Dominion Bureau of Statistics, Department of Trade and Commerce.

It will be noted that the 30 industries selected out of a possible 55 were so chosen as to embrace all varieties of unemployment and also to represent each area of Canada on a *pro rata* basis.

Our object primarily is to see if the index of fluctuation adds anything to the correlation between unemployment and the degree of organization as shown by the combined weight of the three indices, (1) age, (2) female content, (3) earnings.

It was found that the correlation of these three factors with unemployment was slightly higher than was the case of the correlation of the seven factors with unemployment in the 122 industries of the sample (mainly due to differences in sample). It was further found that the index of fluctuation did not add, except in a negligible degree, to this correlation, but merely assumed a weight by drawing heavily from the age and female content. The explanation of this is that the "organization" as represented takes into account the seasonal fluctuation of the industries. In other words, the organization is shown with due allowance made for any existing seasonality in the industry. (See Appendix 3.)

We are, therefore, assuming that the same result would apply to the 122 industries in the sample, i.e., the factors dealt with show in their combined effect whatever importance seasonality may have.

Industry Groups Not Dealt with in Sample.—We will now deal briefly with those groups which were not within the scope of the sample. It has been noted that three industries each of which had over 40,000 wage-earners were considered to give a false trend to the rate of unemployment. However, these industries behave precisely as similar industries having smaller bodies of wage-earners, although in the aggregate they show a far higher rate of unemployment than the average for the sample.

LXI.—NUMBER AND PERCENTAGE OF MALE WAGE-EARNERS NOT AT WORK IN THREE LARGE INDUSTRIES SHOWING HIGHER UNEMPLOYMENT THAN AVERAGE, JUNE 1, 1931

Province	Industry	Male Wage-Earners		
		Total	Not at Work June 1	
			No	P.C.
Que.....	Building and structures.....	44,725	13,090	29.27
Ont.....	Mixed and general farming.....	47,730	4,844	10.15
Ont.....	Building and structures.....	45,658	16,989	37.21
	Total.....	138,113	34,923	25.28

From the above figures we can see that the unemployment merely follows what would be expected from the type of the industry (see Statement L).

We now come to the group showing wage-earners specifically connected with unclassified industries. These are heterogeneous groups composed of numerous small and relatively unimportant industries. The aggregate of this group shows 231,823 wage-earners of whom 45,219 or 19.5 p.e. were not at work on June 1. The percentage unemployed is somewhat larger than the aggregate of wage-earners specifically connected with *classified* industries, where the percentage idle on June 1 was 17.6 p.e.

Wage-Earners Not Specifically Connected with Any Industry.—We now come to that group of wage-earners who have no definite industrial attachment. This group contains a preponderance of the poorest type of unskilled worker and labourer. Its main content is the transient worker (who under no circumstances would be apt to work for the full year) and the "odd jobs" man so well known in small towns all over the country. This group comprised 165,172 wage-earners, 90,091 of whom were not at work on June 1, 1931, or a percentage idle of 54.54, a loss of over half the working year.

It must not be supposed that this group takes in *all* the occupations known as labourers and unskilled workers—it merely takes in about 40 p.e. of this class of worker, which numbers 422,284, 161,631 or 38.28 p.e. of whom were not at work on June 1 (see Statement LXVII, page 163).

This shows that the unemployment is far worse in the industry group than for unskilled labour generally. We can say, then, that the better class of unskilled labour state some industrial attachment even though this may be constantly shifting. The unspecified group, however, may be said in general to verge on the unemployable and naturally organization is practically non-existent. Another way of looking at the class is that there are apparently no specialized jobs.

We can sum up the foregoing analysis in one statement. Organization of an industry means a high percentage of specialized jobs. Unemployment among this class being negligible, the unemployment in the whole industry is less. An intensive selection of workers means that while unemployment is minimized for the selected portion, the very nature of the process throws nearly the entire unemployment upon the unspecialized worker. The greater the number of highly organized industries in the country, the greater the disparity in the distribution of unemployment, organization still meaning centralization and specialization of requirements. From this we see that there is a very close relation between (1) skilled occupations and highly organized industries and (2) unskilled occupations and loosely organized industries.

We will now consider this "Unspecified" class of industrial connection and its rating on the basis of degree of organization. To do so we must refer both to the indices in the foregoing statement and to Statement LXI which shows the indices for the specific industries. We know that organization in the "Unspecified" class is virtually non-existent. This being the case, the three main factors denoting organization should show this fact. These three factors are (1) average earnings per week worked, (2) age liability to unemployment and (3) female content. A very loosely organized industry should show (1) low earnings, (2) an indifference to age content and (3) small female content.

However, we must remember that this class of industry is far from homogeneous. It is not an industry but an accumulation of rejects from all industries—obsolete occupations, unemployables, young people not properly placed, etc. Thus we see at once that the age liability to unemployment can have no real significance because of this heterogeneity of content. The index furnished above shows that the age content is practically the same as for all-Canada wage-earners, i.e., the rejects are from all ages.

The earnings are very low as is the female content, both lower than any group of industries in the sample. The main feature is, however, that the process of selectivity is non-existent in this group.

LXII.—WAGE-EARNER GROUPS OF NO SPECIFIED INDUSTRIAL CONNECTIONS, SHOWING MALE WAGE-EARNERS LOSING TIME, WEEKS LOST, EARNINGS, FEMALE CONTENT AND AGE-LIABILITY TO UNEMPLOYMENT, CANADA, BY PROVINCES, YEAR ENDED JUNE 1, 1931

Province	Male Wage-Earners				Weeks Lost				Weeks Worked	Earnings			Female Wage-Earners			Age Liability to Unemployment
	Total	Losing Time			Total	Average				Total \$00	A. v. per Week Worked	Index	No.	P. C.	Index	
		No.	P. C.	Index		No.	P. C. of Year	Index								
Prince Edward Island.....	1,231	608	56-70	129	17,375	14-11	27-13	132	41,248	3,970	9-62	43	14	1-14	5	89
Nova Scotia.....	10,247	6,882	67-16	153	185,989	18-15	34-90	170	302,408	28,511	9-43	42	114	1-11	5	98
New Brunswick.....	13,317	10,295	77-31	176	264,854	19-89	38-25	187	396,131	37,806	9-54	42	113	0-85	4	98
Quebec.....	51,969	37,691	72-53	165	1,094,345	21-06	40-60	198	1,487,054	189,021	12-71	56	1,202	2-49	12	99
Ontario.....	46,478	35,453	77-96	177	1,149,239	25-27	48-60	237	1,094,387	138,466	12-65	56	1,384	3-04	14	100
Manitoba.....	11,623	9,490	81-65	186	236,883	28-12	54-05	264	249,243	26,775	10-74	48	233	2-00	9	100
Saskatchewan.....	8,876	7,031	79-21	180	229,277	25-83	49-67	242	204,577	20,919	10-23	45	171	1-93	9	100
Alberta.....	6,928	5,558	80-23	182	184,189	26-59	51-13	249	164,174	19,371	11-80	52	147	2-12	10	100
British Columbia.....	15,509	12,258	79-04	180	432,881	27-01	53-67	262	271,221	38,587	14-23	63	241	1-55	7	100

Significance of Female Content.—On the *a priori* consideration that females were considered more desirable for clerical and office jobs as well as for certain positions in highly organized professions such as education and health, Statement LXIII was constructed for the 122 industries given in the sample, showing the number of males and females who were in the above-mentioned occupations and their relation to the total males and females in the industries. This statement shows that the majority of females are engaged in the aforementioned occupations, which are mostly full-time jobs and that the majority of males are not so engaged.

LXIII.—NUMBER OF WAGE-EARNERS AND NUMBER IN CLERICAL OCCUPATIONS IN THE 122 INDUSTRIES OF THE SAMPLE, BY SEX, CANADA, JUNE 1, 1931

Province	Industry	Both Sexes			Male		Female	
		Total Wage-Earners	Clerical Occupations ^{1,2}		Total Wage-Earners	Clerical Occupations ¹	Total Wage-Earners	Clerical Occupations ²
			No.	P.C.				
	TOTAL SAMPLE.....	640,552	138,812	21.6	410,490	65,208	230,122	73,603
B.C.	Fishing.....	3,047	14	0.46	3,029	13	18	1
Sask.	Building and structures.....	5,039	53	1.05	5,016	32	23	21
Alta.	Building and structures.....	5,178	77	1.49	5,139	39	39	38
Que.	Asbestos mining.....	2,810	83	2.95	2,787	62	23	21
B.C.	Fish curing and packing (Mfg.).....	3,556	148	4.16	3,000	114	556	34
N.B.	Forestry and logging.....	3,120	17	0.54	3,109	13	11	4
B.C.	Coal mining.....	4,834	38	0.78	4,822	25	12	12
Ont.	Agricultural implements and machinery (Mfg.).....	5,390	612	11.35	5,154	407	236	205
N.S.	Iron smelting, converting, refining, rolling (Mfg.).....	3,294	177	5.35	3,227	124	67	53
Que.	Men's clothing—suits, coats (Mfg.).....	5,699	221	3.88	3,215	101	2,484	120
Ont.	Women's clothing—skirts, cloaks, waists (including children's wear) (Mfg.).....	5,887	323	5.48	2,136	46	3,751	277
B.C.	Mixed and general farming.....	5,092	9	0.14	5,091	5	101	4
N.B.	Sawmill products (Mfg.).....	2,774	72	2.59	2,743	46	29	26
N.S.	Forestry and logging.....	2,316	4	0.17	2,283	4	23	9
N.B.	Building and structures.....	4,958	53	1.06	4,923	25	35	28
N.B.	Building and structures.....	3,239	45	1.39	3,219	25	20	20
N.S.	Water transportation.....	5,024	201	4.00	4,968	158	56	43
Que.	Shipbuilding.....	2,708	123	4.54	2,696	115	12	7
Man.	Hotels, restaurants, and taverns.....	4,878	342	7.01	2,741	240	2,137	102
Que.	Quarries, gravel pits; salt wells.....	2,588	54	2.08	2,582	30	6	14
N.B.	Pulp and paper (Mfg.).....	2,729	176	6.44	2,640	95	89	81
Ont.	Wire and wire goods (Mfg.).....	2,878	232	8.06	2,578	169	309	120
Ont.	Coal and wood (Retail Trade).....	3,615	602	16.65	3,282	249	363	353
B.C.	Gardening—truck farming.....	2,167	—	—	2,136	—	31	—
B.C.	Hotels, restaurants, and taverns.....	8,491	635	7.47	5,889	442	2,602	193
Que.	Iron smelting, converting, refining, rolling (Mfg.).....	3,777	435	11.53	3,576	297	201	138
Que.	Women's clothing—skirts, cloaks, waists (including children's wear) (Mfg.).....	8,754	468	5.33	2,048	125	6,706	343
Ont.	Bricks and tile (Mfg.).....	2,165	68	3.14	2,104	29	61	30
Ont.	Automobile repair service.....	4,548	183	4.03	4,457	84	91	79
Que.	Cartage, trucking, and hauling service.....	5,674	149	2.47	5,643	114	31	28
Que.	Automobile repair service.....	2,486	51	2.05	2,453	32	23	19
Ont.	Sheet metal products (Mfg.).....	2,690	309	11.48	2,344	151	346	158
Ont.	Glass and its products (Mfg.).....	2,179	172	7.89	2,012	87	167	85
Ont.	Hardware and tools (Mfg.).....	3,901	311	7.97	3,510	118	391	193
Sask.	Hotels, restaurants, and taverns.....	3,702	249	6.62	2,235	201	1,527	48
Que.	Rubber products (Mfg.).....	4,245	481	11.35	2,875	298	1,370	183
Ont.	Taxicabs, livery, and bus service.....	2,660	155	5.82	2,587	82	73	73
Ont.	Quarries, gravel pits; salt wells.....	2,840	79	2.81	2,805	62	35	27
Que.	Brass and copper products (Mfg.).....	2,909	301	10.04	2,729	158	267	143
Que.	Coal and wood (Retail Trade).....	2,694	407	15.09	2,453	283	141	124
Ont.	Nickel-copper mining and milling.....	2,607	44	1.75	2,497	35	10	9
Alta.	Grain growing.....	2,121	1	0.04	2,112	1	0	—
Alta.	Hotels, restaurants, and taverns.....	5,857	508	8.67	3,792	353	2,065	155
N.B.	Mixed and general farming.....	5,343	3	0.05	5,323	—	20	3
Que.	Taxicabs, livery, and bus service.....	4,076	71	1.74	4,044	43	32	28
Ont.	Boots and shoes (Mfg.).....	4,878	210	4.47	3,313	81	1,565	138
Que.	Furniture (including upholstery) (Mfg.).....	2,880	174	6.04	2,748	118	132	56
Que.	Boilers, engines, and machinery (Mfg.).....	4,985	475	9.53	4,676	252	309	223
Ont.	Petroleum products (Mfg.).....	3,058	411	13.39	2,877	242	191	169
B.C.	Printing, publishing, and bookbinding.....	2,455	326	13.28	2,098	149	357	177
Ont.	Cotton goods—yarn, cloth, thread (Mfg.).....	4,692	102	3.45	2,717	65	1,975	97
Ont.	Gardening—truck farming.....	3,235	3	0.09	3,200	—	36	3
Ont.	Meat, poultry, and fish (Retail Trade).....	5,109	217	4.25	4,867	46	233	171
Ont.	Barber and hairdressing shops.....	3,793	29	0.76	2,553	1	1,240	28
Man.	General and departmental (Retail Trade).....	8,404	2,010	26.29	3,985	583	4,419	1,627
Ont.	Non-ferrous smelting and refining (Mfg.).....	2,964	64	2.17	2,941	23	7	15
Ont.	Electrical apparatus (Mfg.).....	5,462	1,117	20.45	4,256	567	1,206	550
Ont.	Storage.....	3,428	392	11.43	3,237	264	191	128
B.C.	General and departmental (Retail Trade).....	4,881	908	18.60	2,339	190	2,542	718
Ont.	Investment and loan.....	6,289	3,569	56.75	4,399	1,720	1,890	1,849
Que.	Meat, poultry, and fish (Retail Trade).....	4,743	211	4.45	4,518	57	227	154
Ont.	Telegraph systems.....	3,085	1,969	63.82	2,741	1,643	344	326
Que.	Barber and hairdressing shops.....	3,096	33	1.06	2,133	10	963	23
Ont.	Hosiery and knitted goods (Mfg.).....	7,058	523	7.41	2,721	130	4,337	387
Ont.	Billiard halls and sporting clubs.....	3,784	235	6.20	3,297	191	467	134
Man.	Printing, publishing, and bookbinding.....	2,725	402	14.75	2,145	137	580	265
Ont.	Slaughtering and meat packing (Mfg.).....	4,377	494	11.28	3,993	385	384	109
Ont.	Woolens and worsteds (Mfg.).....	5,523	304	5.50	3,056	127	2,467	177
Ont.	Liquors, beverages (not aerated waters) (Mfg.).....	3,083	375	12.16	2,795	212	288	163
Que.	Bread and other bakery products (Mfg.).....	5,329	210	3.94	5,105	130	224	80
N.S.	Steam railways.....	4,505	442	9.81	4,403	365	109	77
Que.	Biscuits and confectionery (Mfg.).....	3,328	290	8.41	2,011	153	1,317	127
Que.	Tobacco, cigars, and cigarettes (Mfg.).....	6,170	482	7.80	2,946	265	3,200	199

¹ Includes clergy, doctors, telegraph and telephone operators and permanent government positions.² Includes teachers, nurses, telegraph and telephone operators and permanent government positions.

LXIII.—NUMBER OF WAGE-EARNERS AND NUMBER IN CLERICAL OCCUPATIONS IN THE 122 INDUSTRIES OF THE SAMPLE, BY SEX, CANADA, JUNE 1, 1931—Con.

Province	Industry	Both Sexes		Male		Female	
		Total Wage-Earners	Clerical Occupations ¹ No. | P.C.	Total Wage-Earners	Clerical Occupations ¹	Total Wage-Earners	Clerical Occupations ¹
N.S.	Mixed and general farming.....	5,399	10 | 0.18	5,398	3	31	7
N.S.	Fishing.....	2,819	8 | 0.28	2,808	5	11	3
Ont.	Paper products—boxes, bags, stationery (Mfg.).....	4,680	570 | 12.18	2,830	207	1,841	363
Ont.	Private domestic service (Mfg.).....	49,274	228 | 0.48	4,389	14	44,885	214
Ont.	Biscuits and confectionery (Mfg.).....	5,153	420 | 8.15	2,725	197	2,428	223
Ont.	Telephone systems.....	10,812	6,747 | 62.40	4,344	856	6,458	591
Ont.	Drugs and toilet preparations (Retail Trade).....	3,180	133 | 4.18	2,555	33	625	101
Ont.	Tanning (Mfg.).....	2,482	135 | 5.44	2,312	61	170	74
Que.	Telephone systems.....	6,517	4,356 | 66.84	2,090	691	3,827	3,645
Que.	General and departmental (Retail Trade).....	10,442	1,520 | 14.55	5,318	484	5,124	1,036
Que.	Private domestic service.....	46,358	230 | 0.49	4,335	8	42,023	222
Ont.	Hardware and builders' supplies (Retail Trade).....	4,267	753 | 17.64	3,024	245	643	508
Que.	Electric light and power production and distribution.....	5,291	985 | 18.61	4,891	608	409	377
N.B.	Steam railways.....	5,881	873 | 14.84	5,680	689	201	187
Ont.	Lodging and boarding houses.....	3,193	49 | 1.53	2,249	16	944	33
Sask.	Storage.....	3,003	105 | 3.49	2,962	64	41	41
Que.	Investment and loans.....	4,185	2,850 | 68.10	2,997	1,694	1,188	1,156
Ont.	Flour and grain milling.....	2,701	252 | 9.33	2,523	109	178	143
Ont.	Automobiles and accessories (Retail Trade).....	3,881	701 | 18.06	3,484	326	397	375
Ont.	Filling stations (Retail Trade).....	2,318	88 | 3.89	2,257	52	55	31
Ont.	Laundries; laundering.....	4,211	233 | 5.53	2,493	31	1,718	202
Que.	Hardware and builders' supplies (Retail Trade).....	2,776	499 | 17.97	2,455	304	321	195
Que.	Dairy farming.....	4,899	1 | 0.02	4,839	-	60	1
Que.	Liquors, beverages (not aerated waters) (Mfg.).....	2,473	282 | 11.40	2,263	198	210	84
Ont.	Illuminating and fuel gas (Mfg.).....	2,604	439 | 16.70	2,366	207	238	228
Que.	Silk, silk goods (including artificial silk) (Mfg.).....	5,502	366 | 6.65	3,071	157	2,431	209
Que.	Dairy products (Retail Trade).....	5,542	569 | 10.27	5,104	218	436	351
B.C.	Pulp and paper (Mfg.).....	2,925	149 | 5.09	2,842	101	85	48
B.C.	Electric railways.....	2,247	258 | 10.99	2,203	138	144	120
Que.	Electric railways.....	4,956	392 | 7.91	4,823	268	133	124
Que.	Dairy products (Retail Trade).....	2,479	263 | 10.61	2,368	198	111	65
Ont.	Electric railways.....	6,020	462 | 7.67	5,861	314	159	148
Sask.	Education.....	9,006	8,345 | 92.66	3,169	3,117	5,897	5,228
Ont.	Butter, cheese, and condensed milk (Mfg.).....	3,306	301 | 9.10	2,992	105	314	196
Que.	Health.....	15,105	10,881 | 72.03	4,083	3,270	11,020	7,611
Que.	Health.....	7,750	5,154 | 66.50	2,283	1,826	5,467	3,328
Man.	Education.....	6,413	5,941 | 92.64	2,041	1,539	4,372	4,002
B.C.	Non-ferrous smelting and refining (Mfg.).....	3,311	144 | 4.35	3,256	102	58	42
Alta.	Education.....	7,092	6,514 | 91.85	2,420	2,299	4,672	4,215
B.C.	Education.....	5,907	5,444 | 92.16	2,151	2,044	3,759	3,400
Que.	Banking.....	7,699	5,683 | 73.81	5,093	3,960	1,798	1,723
P.E.I.	Mixed and general farming.....	2,053	3 | 0.15	2,046	1	9	2
Que.	Postal service.....	4,279	3,834 | 89.60	3,492	3,389	787	545
Que.	Police (Municipal).....	2,300	2,240 | 97.39	2,285	2,228	15	12
Que.	Education.....	20,929	19,700 | 94.17	5,843	5,551	15,088	14,158
Que.	National defence.....	2,605	2,326 | 89.29	2,528	2,258	77	68
Ont.	Religion.....	6,237	5,734 | 91.93	5,392	5,127	845	607
Ont.	Police (Municipal).....	2,514	2,367 | 94.15	2,454	2,331	69	36
Que.	Religion.....	4,667	3,992 | 85.53	4,114	3,909	553	83
All-Canada	wage-earners.....	2,570,097	239,882 | 9.33	2,022,200	123,748	547,837	116,133

Here we see that females are numerically larger in clerical and professional services than are males, although in the sample there are nearly twice as many males as females.

As a test to determine the validity of our assumption that the organization of the industry was really shown by the total weight of (1) female content, (2) earnings and (3) age liability to unemployment, an index was constructed showing the percentage of the wage-earners (male and female combined) who belonged to office and clerical occupations, which appeared quite representative of the organization of the industry. *It was found that this index correlated with the unemployment index (X_{10}) to almost exactly the same extent as the combined weight of the three factors mentioned above, and that the weights of the three factors were negligible in a partial correlation with this index introduced as a fourth factor.* Thus we feel safe in saying that the degree of organization of the industry as shown by the structure of the personnel is the main factor influencing unemployment and that any attempt to satisfactorily solve this problem must be through this approach, *i.e.*, through the study of the abnormal distribution of the time lost among the wage-earners, knowing that this abnormal distribution is mainly the result of the process of organization.

Unemployment among Females.—We have up to this point concerned ourselves only with unemployment among males. A study of female unemployment conducted with regard to industrial attachment is very unsatisfactory in that females are preponderantly found in certain occupations rather than industries. By far the greater percentage of female wage-earners are engaged in the occupations shown in the statement below.

LXIV.—NUMBER AND PERCENTAGE OF FEMALE WAGE-EARNERS IN CERTAIN OCCUPATIONS, PERCENTAGE LOSING TIME AND PERCENTAGE OF TIME LOST, CANADA, YEAR ENDED JUNE 1, 1931.

Occupation	Female Wage-Earners			P.C. of Time Lost during Year
	No.	As P.C. of Total	P.C. Losing Time	
All occupations.....	547,837	100.00	25.14	10.17
Textile workers.....	49,329	9.00	52.48	18.82
Telegraph and telephone operators.....	15,102	2.75	21.08	6.22
Saleswomen.....	42,831	7.83	28.47	11.87
Nurses—graduate and in training.....	17,888	3.27	14.90	5.82
Teachers—school.....	55,248	10.08	7.36	3.67
Domestic servants.....	122,099	22.11	21.48	9.02
Housekeepers and maîtresses.....	21,535	3.93	14.75	6.54
Waitresses.....	12,561	2.29	36.70	15.00
Clerical occupations.....	116,133	21.20	17.41	7.33
Total.....	457,327	83.48	44.31	9.27

It can be readily seen that the only occupation above which is widely distributed among industries is "Clerical." We may say that the larger the percentage of wage-earners who are in clerical occupations in an industry, the more organized and centralized is that industry. The remaining occupations are typically female and for the most part are relatively full-time in well organized industries. The point to be stressed is that where females are in occupations which are not found in highly organized industries they suffer very nearly as much unemployment as do males (see Textiles), showing that it is not the sex difference which causes a low rate of unemployment among females, but rather the fact that females are concentrated in favoured occupations in organized industries, (e.g., telephone operators, clerical, teachers, nurses).

It has been shown that the percentage of females in the industry correlates highly with the degree of organization of the industry, showing that the exceptions (notably textile workers) are few. This fact is again emphasized when we consider "banking." Banking is admittedly a highly organized industry and shows small unemployment. However, in the rating by organization it appears among the relatively loosely organized industries. The reason for this is that females have not taken over junior clerical positions in banking to nearly the same extent as in other industries. This has upset both the "age" and "female content," important factors in the organization rating. Thus banking, if it followed the practice of other industries and employed mostly female juniors, tellers, etc., would have appeared in its real organization rating—since the female content would have been increased and, the age of the male wage-earners being higher as a result of males being found mainly in the responsible positions, there would be a favourable "age liability of unemployment." To obtain an estimate of any differences which might occur among the industries in the sample, a tabular statement was compiled both of the percentage average time lost during the year by male and female wage-earners combined, and of the percentage wage-earners (male and female combined) who lost any time during the year. Statement LXV shows the industries in order of male unemployment side by side with similar figures for total wage-earners. It is interesting to note the percentage differences. Of course, there is a very important factor to be considered, viz., the proportion of female workers to male. The size of the female group would naturally have considerable effect upon the difference in percentage. Accordingly in Statement LXV will be found the number of male wage-earners and also the total wage-earners in each industry. It will be seen, however, that there are very few differences in the percentage of time lost between male and all wage-earners. In industries where females are confined to the clerical staff or otherwise comprise a small percentage of the total workers, the average time lost by all is only slightly lowered as would be expected. In this connection refer to Statement LXIII, showing the numbers of office employees both male and female. In some

industries where females are competing with males in such establishments as certain textile mills, rubber products factories, biscuit and confectionery manufacturing plants, we find that unemployment is much larger among females. In other industries where competitive conditions as between males and females are equally operative, we find, however, that females show a lower rate of unemployment than do males. Some examples are fish curing and packing in British Columbia, and one of the textile industries, the manufacturing of women's clothing, in Ontario.

LXV.—TOTAL AND MALE WAGE-EARNERS IN THE 122 INDUSTRIES OF THE SAMPLE, AND DIFFERENCES BETWEEN TOTAL AND MALE IN PERCENTAGES OF AVERAGE TIME LOST AND PERCENTAGES LOSING TIME, CANADA, YEAR ENDED JUNE 1, 1931

Province	Industry	Wage-Earners		Average Time Lost as P.C. of Year by			P.C. Losing Time of		
		Male	Total	Male Wage-Earners (3)	Total Wage-Earners (4)	Difference (Col. 4—Col. 3) (5)	Male Wage-Earners (6)	Total Wage-Earners (7)	Difference (Col. 7—Col. 6) (8)
		(1)	(2)				(5)	(7)	(8)
Sask....	Building and structures.....	5,010	5,039	43.40	43.27	-0.13	76.31	76.11	-0.20
Alta....	Building and structures.....	5,139	5,178	43.11	42.90	-0.21	77.91	77.54	-0.37
B.C....	Fish curing and packing (Mfg.).....	3,000	3,559	42.11	37.56	-4.55	70.66	62.91	-7.75
B.C....	Cool mining.....	4,829	4,834	38.84	38.81	-0.03	81.00	80.88	-0.12
Ont....	Agricultural implements and machinery (Mfg.).....	5,154	5,390	38.75	37.46	-1.29	68.54	66.63	-2.01
N.S....	Iron smelting, converting, refining, rolling (Mfg.).....	3,227	3,294	37.48	36.90	-0.58	79.07	78.72	-0.35
B.C....	Fishing.....	3,029	3,047	34.98	34.88	-0.10	66.62	66.42	-0.20
N.B....	Forestry and logging.....	3,109	3,120	34.05	34.04	-0.01	74.46	74.42	-0.04
N.B....	Sawmill products (Mfg.).....	2,745	2,774	32.03	31.96	-0.07	72.53	72.13	-0.40
Que....	Asbestos mining.....	2,787	2,810	30.67	30.50	-0.17	76.13	75.66	-0.47
B.C....	Mixed and general farming.....	5,991	6,092	29.61	29.33	-0.28	54.89	54.35	-0.54
N.S....	Building and structures.....	4,923	4,958	28.34	28.19	-0.15	66.59	65.19	-1.40
B.C....	Gardening—truck farming.....	2,136	2,167	27.88	27.83	-0.05	49.34	49.24	-0.10
Ont....	Women's clothing—skirts, cloaks, waists (including children's wear) (Mfg.).....	2,130	5,887	27.65	23.04	-4.61	63.48	57.80	-5.68
N.B....	Building and structures.....	3,210	3,230	27.13	27.00	-0.13	64.05	63.69	-0.36
Ont....	Bricks and tile (Mfg.).....	2,104	2,165	26.69	26.19	-0.50	60.65	60.63	-0.02
Ont....	Quarries, gravel pits; salt wells.....	2,805	2,840	26.65	26.66	+0.01	63.03	62.75	-0.28
Que....	Men's clothing—suits, coats (Mfg.).....	3,215	5,699	25.44	24.17	-1.27	57.20	58.33	+1.13
Ont....	Glass and its products (Mfg.).....	2,012	2,179	25.39	24.81	-0.58	50.40	55.30	+4.90
Ont....	Gardening—truck farming.....	5,200	5,236	24.01	24.06	+0.05	47.93	47.84	-0.09
Que....	Quarries, gravel pits; salt wells.....	2,682	2,588	23.13	23.11	-0.02	56.15	56.07	-0.08
Alta....	Grain growing.....	2,112	2,121	22.71	22.71	-	47.44	47.38	-0.06
Ont....	Cotton goods—yarn, cloth, thread (Mfg.).....	2,717	4,692	22.61	22.46	-0.15	69.03	59.78	-9.25
Ont....	Billiard halls and sporting clubs.....	3,297	3,784	22.28	21.85	-0.43	47.95	47.23	-0.72
Ont....	Wire and wire goods (Mfg.).....	2,678	2,878	21.98	21.23	-0.75	55.23	53.61	-1.62
Ont....	Hardware and tools (Mfg.).....	3,510	3,901	21.88	20.96	-0.92	56.32	54.22	-2.10
Ont....	Automobile repair service.....	4,457	4,948	21.00	20.85	-0.15	45.85	45.51	-0.35
Que....	Sheet metal products (Mfg.).....	2,544	2,600	20.98	19.88	-1.10	60.63	48.81	-11.82
Que....	Shipbuilding.....	2,969	2,708	20.75	19.73	-1.02	62.15	52.69	-9.46
N.B....	Pulp and paper (Mfg.).....	2,640	2,729	20.69	20.25	-0.44	61.17	50.10	-11.07
Que....	Iron smelting, converting, refining, rolling (Mfg.).....	3,576	3,777	20.84	20.13	-0.71	49.38	47.70	-1.68
Man....	Hotels, restaurants, and taverns.....	2,741	4,878	20.13	18.02	-2.11	38.83	37.94	-0.89
Que....	Cartage, trucking, and haulage service.....	5,643	6,674	19.80	19.73	-0.07	45.95	45.81	-0.14
Alta....	Hotels, restaurants, and taverns.....	3,792	5,857	19.73	19.06	-0.67	40.47	41.15	+0.68
Ont....	Brass and copper products (Mfg.).....	2,729	2,990	19.59	18.98	-0.61	49.50	48.33	-1.17
N.S....	Water transportation.....	4,958	5,024	19.34	19.19	-0.15	45.14	44.89	-0.25
Que....	Rubber products (Mfg.).....	2,873	4,245	19.29	20.56	+1.27	56.48	59.27	+2.79
Ont....	Boots and shoes (Mfg.).....	3,313	4,878	19.29	18.23	-1.06	52.39	51.31	-1.08
Que....	Automobile repair service.....	2,403	2,486	19.17	19.15	-0.02	44.82	44.81	-0.01
Ont....	Taxicabs, livery, and bus service.....	2,587	2,600	18.00	18.54	+0.54	40.12	39.37	-0.75
Ont....	Woolens and worsteds (Mfg.).....	3,056	5,523	17.94	18.71	+0.77	53.07	56.13	+3.06
N.S....	Coal and wood (Retail Trade).....	2,453	2,594	17.63	17.11	-0.52	43.70	42.25	-1.45
Que....	Forestry and logging.....	2,293	2,316	17.09	17.00	-0.09	46.83	45.64	-1.19
B.C....	Hotels, restaurants, and taverns.....	5,889	8,491	17.13	17.25	+0.12	32.04	34.40	+2.36
Ont....	Coal and wood (Retail Trade).....	3,252	3,615	16.51	15.54	-0.97	43.68	41.14	-2.54
Que....	Hosiery and knitted goods (Mfg.).....	2,721	7,058	16.09	16.94	+0.85	44.83	48.00	+3.17
Que....	Tobacco, cigars, and cigarettes (Mfg.).....	2,046	6,176	15.92	17.25	+1.33	44.70	51.17	+6.47
Que....	Furniture (including upholstering) (Mfg.).....	2,748	2,880	15.86	15.71	-0.15	44.25	43.58	-0.67
Que....	Women's clothing—skirts, cloaks, waists (including children's wear) (Mfg.).....	2,048	8,754	15.67	17.50	+1.83	42.07	48.41	+6.34
Que....	Taxicabs, livery, and bus service.....	4,044	4,076	15.65	15.65	-	30.96	36.85	+5.89
N.B....	Mixed and general farming.....	5,325	5,349	15.42	15.42	-	48.51	38.44	-10.07
Ont....	Tanning (Mfg.).....	2,312	4,482	15.30	15.36	+0.06	36.92	49.69	+12.77
Ont....	Nickel-copper mining and milling.....	2,497	2,507	14.82	14.79	-0.03	36.08	35.99	-0.09
Ont....	Liquors, beverages (not aerated waters) (Mfg.).....	2,793	3,083	14.73	15.25	+0.52	37.10	37.85	+0.75
Sask....	Hotels, restaurants, and taverns.....	2,235	3,762	14.33	14.23	-0.10	37.24	28.95	-8.29
Ont....	Storage.....	3,237	3,428	14.63	14.56	-0.07	36.39	36.20	-0.19
Ont....	Meat, poultry, and fish (Retail Trade).....	4,867	5,109	14.23	13.86	-0.37	32.05	31.35	-0.70
Ont....	Private domestic service.....	4,389	49,274	13.92	9.69	-4.23	36.71	21.17	-15.54
Que....	Filling stations (Retail Trade).....	2,257	2,312	13.84	13.81	-0.03	32.78	32.44	-0.34
Que....	Boilers, engines, and machinery (Mfg.).....	4,679	4,985	13.59	13.10	-0.49	35.71	34.28	-1.43

LXV.—TOTAL AND MALE WAGE-EARNERS IN THE 122 INDUSTRIES OF THE SAMPLE, AND DIFFERENCES BETWEEN TOTAL AND MALE IN PERCENTAGES OF AVERAGE TIME LOST AND PERCENTAGES LOSING TIME, CANADA, YEAR ENDED JUNE 1, 1931—Con.

Province	Industry	Wage-Earners		Average Time Lost as P.C. of Year by			P.C. Losing Time of		
		Male	Total	Male Wage-Earners (3)	Total Wage-Earners (4)	Difference (Col. 4—Col. 3) (5)	Male Wage-Earners (6)	Total Wage-Earners (7)	Difference (Col. 7—Col. 6) (8)
		(1)	(2)						
Ont.	Barber and hairdressing shops.....	2,553	3,793	13.53	12.94	-0.59	29.02	27.89	-1.13
Ont.	Non-ferrous smelting and refining (Mfg.).....	2,941	2,964	13.63	13.65	0.02	32.13	32.12	-0.01
Que.	Biscuits and confectionery (Mfg.).....	2,011	3,328	13.40	15.42	2.02	35.75	41.10	5.35
Ont.	Biscuits and confectionery (Mfg.).....	2,723	5,153	12.96	14.96	2.00	34.93	41.98	7.05
N.S.	Fishing.....	2,808	2,819	12.78	12.81	0.03	32.37	32.39	0.02
Ont.	Slaughtering and meat packing (Mfg.).....	3,993	4,377	12.53	12.52	-0.01	32.33	32.31	-0.02
Que.	Meat, poultry, and fish (Retail Trade).....	4,516	4,743	12.00	11.77	-0.23	29.42	28.76	-0.66
B.C.	Printing, publishing, and bookbinding.....	2,098	2,435	11.04	11.96	0.92	26.45	26.48	0.03
Que.	Barber and hairdressing shops.....	2,133	3,096	11.76	10.94	-0.82	27.33	25.42	-1.91
Ont.	Paper products—boxes, bags, stationery (Mfg.).....	2,339	4,680	11.61	12.69	1.08	32.22	36.58	4.36
Que.	Private domestic service.....	4,335	46,358	11.75	8.40	-3.35	25.12	18.99	-6.13
Que.	Bread and other bakery products (Mfg.).....	5,105	5,320	11.48	11.40	-0.08	27.91	27.77	-0.14
Man.	General and departmental (Retail Trade).....	3,885	8,404	11.21	13.67	2.46	32.02	36.84	4.82
Ont.	Petroleum products (Mfg.).....	2,877	3,008	11.19	10.85	-0.34	43.62	41.66	-1.96
Que.	Electrical apparatus (Mfg.).....	4,256	5,462	11.01	10.71	-0.30	31.33	31.27	-0.06
Ont.	Investment and loan.....	4,399	6,289	11.09	10.08	-0.91	20.09	19.61	-0.48
Ont.	Illuminating and fuel gas (Mfg.).....	2,366	2,604	11.17	10.67	-0.50	28.10	26.65	-1.45
B.C.	General and departmental (Retail Trade).....	2,339	4,881	10.90	11.75	0.85	24.71	26.55	1.84
N.S.	Steam railways.....	4,405	4,505	10.59	10.46	-0.13	31.32	30.92	-0.40
N.S.	Mixed and general farming.....	5,368	5,399	10.75	10.73	-0.02	29.04	28.95	-0.09
Ont.	Lodging and boarding houses.....	2,240	3,193	10.76	10.25	-0.51	23.43	22.58	-0.85
Ont.	Hardware and builders' supplies (Retail Trade).....	3,624	4,267	10.42	9.75	-0.67	26.07	24.58	-1.49
Ont.	Automobiles and accessories (Retail Trade).....	3,484	3,881	10.44	10.33	-0.11	24.22	23.94	-0.28
Man.	Printing, publishing, and bookbinding.....	2,145	2,725	10.03	10.69	0.66	24.70	25.76	1.06
Ont.	Drugs and toilet preparations (Retail Trade).....	2,555	3,180	9.86	9.69	-0.17	21.01	21.45	0.44
Ont.	Flour and grain milling.....	2,523	2,701	9.94	9.63	-0.31	28.73	28.03	-0.70
Ont.	Laundries; laundering.....	2,493	4,211	9.15	9.62	0.47	19.14	23.53	4.39
Que.	Silk, silk goods (including artificial silk) (Mfg.).....	3,071	5,502	9.15	9.56	0.41	27.74	30.52	2.78
Ont.	Butter, cheese, and condensed milk (Mfg.).....	2,992	3,306	9.05	9.34	0.29	25.54	26.13	0.57
Ont.	Telegraph systems.....	2,741	3,085	8.90	8.65	-0.25	22.29	22.20	-0.09
Que.	General and departmental (Retail Trade).....	5,318	10,442	8.76	9.56	0.80	21.50	23.87	2.37
Que.	Hardware and builders' supplies (Retail Trade).....	2,455	2,776	8.89	8.69	-0.17	21.75	21.40	-0.35
Ont.	Telephone systems.....	4,344	10,812	8.89	7.18	-1.44	25.60	23.90	-1.76
N.B.	Steam railways.....	5,680	5,881	8.69	8.64	-0.05	20.61	26.34	-0.27
Que.	Liquors, beverages (not aerated waters) (Mfg.).....	2,263	2,473	8.53	7.63	-0.92	28.19	22.37	-5.72
Que.	Electric light and power production and distribution.....	4,891	5,291	8.42	8.06	-0.36	23.20	22.23	-0.97
Ont.	Dairy products (Retail Trade).....	5,109	5,542	8.42	8.35	-0.07	22.81	22.68	-0.13
Que.	Electric railways.....	4,823	4,959	8.34	8.21	-0.13	26.03	26.49	0.46
Que.	Dairy products (Retail Trade).....	2,368	2,479	8.21	8.31	0.10	20.31	20.37	0.06
Que.	Investment and loan.....	3,256	3,311	7.90	7.79	-0.11	35.13	34.82	-0.31
B.C.	Non-ferrous smelting and refining (Mfg.).....	2,697	4,185	7.57	7.33	-0.24	14.48	14.87	0.19
B.C.	Pulp and paper (Mfg.).....	2,842	2,925	7.36	7.64	0.18	26.28	26.39	0.11
Ont.	Electric railways.....	5,861	6,020	7.36	7.25	-0.11	25.29	24.95	-0.31
Que.	Telephone systems.....	2,690	6,517	7.23	5.62	-1.61	24.23	20.16	-4.07
Que.	Dairy farming.....	4,839	4,899	6.88	6.83	-0.05	16.34	16.17	-0.17
B.C.	Electric railways.....	2,203	2,347	6.69	6.60	-0.09	19.51	19.05	-0.46
Ont.	Health.....	4,085	15,105	6.38	6.25	-0.13	16.42	16.05	-0.37
Que.	Health.....	2,283	7,750	5.32	4.67	-0.65	14.71	12.30	-2.41
Sask.	Storage.....	2,062	3,065	5.05	5.04	-0.01	14.45	14.42	-0.03
Sask.	Education.....	3,109	9,006	4.67	6.69	1.02	10.38	11.12	0.74
Man.	Education.....	2,041	6,413	4.09	4.77	0.68	8.42	8.86	0.44
B.C.	Education.....	2,151	5,907	4.13	5.06	0.93	9.29	9.89	0.60
P.E.I.	Mixed and general farming.....	2,046	2,655	3.75	3.75	-	11.24	11.24	-
Alta.	Education.....	2,420	7,092	3.46	4.60	1.14	8.01	9.12	1.11
Que.	Banking.....	5,933	7,699	3.25	2.96	-0.29	6.92	6.70	-0.22
Que.	Education.....	5,843	20,929	2.53	2.44	-0.09	6.22	5.80	-0.42
Que.	Postal service.....	3,492	4,279	2.13	2.23	0.10	6.81	6.73	-0.08
Que.	Police (Municipal).....	2,285	2,300	2.07	2.08	0.01	6.91	6.87	-0.04
Ont.	National defence.....	2,528	2,605	1.86	1.92	0.06	5.34	5.45	0.11
Ont.	Police (Municipal).....	2,454	2,514	1.86	1.94	0.08	5.58	5.77	0.19
Ont.	Religion.....	5,392	6,257	1.21	1.54	0.33	2.85	3.64	0.79
Que.	Religion.....	4,114	4,667	1.09	1.23	0.14	2.89	3.13	0.24
	Total.....	410,490	640,552	15.58			36.44		
All Canada		2,022,290	2,570,097	20.55	18.35		34.62	30.08	

Clearly there is no evidence that females *per se* are less liable to unemployment than males on the basis of cursory analysis by industry. This is, of course, foreign to the popular conception of a lower rate of unemployment among females. The statement has significance only when qualified by the phrase "due to concentration in favoured occupations in which competition is solely female *vs.* female." There are, of course, male occupation groups where competition is entirely among males and limited to about the same extent as in the aforementioned female groups. In these groups we find, if anything, males show lower unemployment than females.

While males furnish little direct competition for women's occupations, females are, in most occupations which are open to either sex, constantly encroaching and successfully competing with males, particularly the young male with commercial ambitions. To make a *real* estimate of differences in unemployment due to sex, we must have uniform conditions of (1) supply of labour, (2) dispersion of labour among industries. If these two factors were equalized between the sexes, competition would be at least on a comparable basis. It is our contention that the lower rate of female unemployment is due (1) to the limited *constant* supply, (2) to the restricted nature of most female occupations, *i.e.*, once the occupation is feminized it remains so.

1. *The Limited Constant Supply of Female Labour.*—To explain this phase let us first consider the male wage-earner. Once a male becomes a wage-earner he remains a wage-earner until he dies or becomes defective as a worker (ceases to be a member of the population). The only possibility of his changing his status is by becoming an "own account" or employer (which means in essence going into business for himself) or becoming financially independent and ceasing gainful occupation. The chances of being established as an "own account" are very small and, as is well known, are diminishing with increased industrialization and of course the possibilities of acquiring independence and ceasing to labour for wages are very small.

A female, however, does not as a general rule become a wage-earner for life. Her status of wage-earner is very often short-lived, being cut short by marriage. Thus, the turnover of female jobs is fairly continuous, and the extent of the total working force never far exceeds the available positions due to this continuous outflow of wage-earners and the short-term tenure of positions among female wage-earners. Under these conditions a small rate of unemployment is inevitable—decidedly smaller at any rate than among males, where the wage-earner status is of much longer duration. A rough idea of the short-term nature of most female employment can be obtained from the 1931 Census figures* of numbers of female wage-earners at different ages. This, of course, can not be interpreted strictly as a barometer of the duration of female employment because it is known that there has been an increasing number of female wage-earners from year to year. This fact would mean, of course, that a certain proportion of the preponderance of youthful ages is due to this increasing trend of female employment.

It is shown in the 1931 Census figures that the ages at which female employment is at a maximum are 18 and 19 years. Let us trace the history of these wage-earners to the end of the year 1934, using (1) the probability of their being alive (based on the Canadian Life Tables of the Bureau of Statistics) from year to year, (2) the probability of their ceasing to be wage-earners due to marriage. For purposes of comparison this information will be placed side by side with the life expectancy of males at the same ages. This would represent a real picture of the extent to which the male and female wage-earners of a given age remained intact. We are, of course, assuming that the marriage rate and death rate are the same for the wage-earners as for the total population.

* See 1931 Census, Vol. VI, Table 6.

LXVI.—NUMBER OF WAGE-EARNERS AT AGES 18-19 IN 1931 AND PROBABLE SURVIVORS AS WAGE-EARNERS IN 1934, BY SEX, CANADA, JUNE 1, 1931

Item	Males	Females	Ratio Females/ Males
	No.	No.	p.c.
Wage-earners at ages 18-19, June 1, 1931.....	107,926	76,684	71.05
Decrease by death during three-year period 1931-34.....	954	602	
Female wage-earners married during period 1931-34.....	-	16,298	
Original wage-earners (ages 18-19 in 1931) who are available as wage-earners in 1934 (ages 21-23).....	106,972	59,784	55.89
Decrease as percentage of 1931.....	0.89	22.04	

† We are assuming that the death rate and marriage rate among wage-earners is the same as for all females at the same ages. As the marriage rate would probably be higher for single wage-earners than for all single females, the above is an under-statement of the facts.

From this statement we can see that over a period of three years the original body of female wage-earners has decreased by 22.04 p.c. while the males have decreased by less than 1 p.c. This can only mean that the potential turnover in female positions was greatly in excess of that of the male job-holder over the period 1931-34 for wage-earners who were 18 and 19 in 1931.

2. *The Protected Nature of Female Occupations.*—A feature of occupations which have become typically female is the development of a force which has maintained those occupations for females alone—male competition being practically *nil*. The reasons for this seem to be primarily that certain industrial changes are causing a demand for a type of work which, while being year-round, can readily be refilled and which offers little inducement to the male not only because of low present wages but also because of lack of future opportunities. It is obvious that positions of this sort are made-to-order for females who intend to marry after a few years of wage-earning. Examples of these occupations are office appliance operators, stenographers, filing clerks, department store clerks and an increasing number of factory jobs in such industries as tobacco and cigarette manufacturing, rubber products manufacturing and many other machine processes. Females are becoming increasingly spread over industry, and furnish competition to males in some, but—and this is significant—once having feminized an occupation, receive slight competition from males.

SUMMARY

The findings of this chapter can be summarized as follows:—

1. The outstanding feature disclosed by a study of the relation of unemployment to the industrial structure is a process of evolution from one end of a scale to the other in the relationship between the industry and the worker. By taking the industries as they existed in 1931 and breaking them up, in so far as they can be broken up, into homogeneous groups, we find them capable of a classification that will fit into a scale. Such a classification and such a scale are hidden from us if we regard industries only when shown in large main classes or when we trust to mere summaries in large aggregates. This scale follows a process which has all the appearance of representing what has actually happened in the course of time. At the upper end is the organically perfect industry, *i.e.*, that which can, without hesitation, be called an "industry"; at the other extreme is a loose aggregate which has to be given the name of "industry" because its workers depend upon it, but which otherwise bears very little resemblance to the one at the upper end of the scale. Between these extremes are graduations of intermediate stages. Now the two features which characterize the graduation into these stages are: (1) a progressive tendency to permanent attachment of larger and larger proportions of the workers to the industry with the results that the non-permanent elements are being discarded and disowned and that the industry is concentrating or contracting so as to include only the minimum number of workers or those of a permanent character; and (2) following logically from the first, a progressive differentiation between the employed and unemployed as we go up the scale. In the lower part of the scale, if we take two persons at random, "A" is just as likely to be unemployed as "B"; in the upper part of the scale, "A" is hardly ever likely to be *unemployed*, while "B" is hardly likely to be *employed*—or what amounts to the same thing—if "B" claims attachment to the industry and is at present unemployed, it is probable that he has lost attachment and will remain permanently unemployed so far as that industry is concerned. He is of a different age, a different occupation from "A" and it will be found that this occupation is regarded as no longer necessary to the industry. In the lower end of the scale, both "A" and "B" are more apt to lose time than the "A" of the upper end, but neither one of them is apt to lose as much time as the "B" of the upper end. The intermediate industries in the scale are mere graduations of differentiations between "A" and "B".

2. The nature of the worker at the upper end of the scale as compared with the lower can probably be brought out more definitely. It is not strictly a differentiation between skilled and unskilled—it is more a differentiation between the permanently necessary and the casually necessary. We can conceive an industry at the lower end of the scale where no worker is necessary the year round, and one at the other end where all workers are necessary the year round. An industry perfectly mechanized, in which every worker has a fixed place and each place is absolutely necessary, is obliged to keep every worker on so long as it is operating at

all, or, if imperfectly mechanized, until it has devised a place in which one person will take the place of two and so utterly discard the second person. Included in this mechanism are the office employees. The whole plant becomes a fixed "overhead". At the opposite extreme we can conceive of an industry in which there is no overhead. The worker is taken on for a job. He finishes that and goes to another place for another job and so on. He loses the time between jobs. These are only theoretical extremes, but we find actual industries approaching closely to these extremes. At present the earmarks of the upper extreme are (1) high proportion of office employees and, in consequence, females; (2) higher earnings per week worked, and (3) selected age composition. These are merely the earmarks or the symptoms which prove the presence of the attribute, not the attribute itself. There are others in the industry just as necessary and just as permanent as these office employees, but the latter are the outward manifestation of the existence of the former. It is not because the female *per se* is necessary that she is found in the more permanent situations, but because she is apt to be an office employee, etc., and the industries with permanent positions have larger proportion of these office employees than others. The same applies to earnings, etc.

3. As hinted in §2 females *per se* are not more favoured in industries than males. Where males and females are found in the same industries the females are not better off than males. The misleading comparison arises from the fact that a larger proportion of the female wage-earners (who number only a fifth of all wage-earners) than of the males are found in favoured industries. Another accidental and irrelevant feature also contributes to the appearance that the female suffers less from unemployment. A female may drop out of the working force through marriage and is not then considered unemployed; the male can not so leave the ranks of the wage-earner.

4. An important condition of unemployment is indicated in the closing part of §3, *viz.*, that unemployment is conditioned not only by the status of the industry but also by the increase in the numbers of the employable force. In the case of males this force grows apace both because once a male is a wage-earner he tends to remain so and because with the expansion of industry he is apt to become a wage-earner rather than go into or stay in independent work. That this is a fact is not only obvious but is borne out by statistical data. The manner in which this condition fits into the aforementioned scale of industries is interesting. The upper part of the scale does not create these workers, it merely discards some with the lapse of time; the lower end of the scale does not create workers—it merely provides precarious work for those already created. It is the lower intermediate part of the scale that causes this condition—industries which are industrial but are subject to fluctuation in size owing to dependence upon foreign markets and consequently sensitive to periods of depression and prosperity, growing abnormally in the latter and shrinking in the former. The abnormal growth creates the wage-earner; the shrinkage does not kill him—he remains a wage-earner but unemployed. Then follows another period of expansion, but the previously created worker must stand his chances of re-employment along with a new body ready to be created for the first time. Herein exists a condition of a permanently unemployed class. The cyclical industries are deadly to the cause of the worker in so far as they are cyclical. In so far as they have a permanent upper trend, of course, they are beneficial, but here the process of discarding already mentioned in the case of the upper part of the scale has a counteracting effect. It would seem that a cyclical "boom" is in the long run the worst enemy of the worker.

5. The foregoing points are not appreciated because the problem of unemployment is usually looked at from the point of view of the industry, not from that of the worker. In other words, it is regarded as an economic rather than a social phenomenon. The student who, from time to time, watches only the growth and shrinkage of industries fails to see a very important process going on as a by-product. When one month he sees a thousand men in an industry and the next month he sees eleven hundred men in the same industry his natural conclusion is that since the industry grows unemployment decreases. What is true is that in the previous month A, B, C, are working; in the next month A, B., D, E, are working—what about C? He is as capable of work as ever but he is unemployed. If an industry booms the natural conclusion is that there is no unemployment. This may be momentarily true but its truth depends upon

whether it has re-employed all the unemployed before taking on new workers. There is no evidence that this is ever done. Such evidence as we have points in the opposite direction. A new applicant is apt to have at least as good a chance for employment as the discarded old hand.

6. Chapter V on ages re-states and reinforces the findings of this chapter as to the tendency toward a separation of the workers into two classes—the permanently employed and the permanently unemployed. Chapter IV, dealing with unemployment by occupations shows that the evolution in industries in relation to the worker breaks down a fundamental and natural relationship between the work and the worker.

7. An interesting and useful disclosure from a study of unemployment in industries relates to part-time work. This term is little understood and much misused. There are two kinds of part-time work; one refers to the odd jobs given to a worker who normally is not attached to the industry; the other is the part-time work given by an industry to its employees in slack times, *i.e.*, the worker is given part-time work instead of being dismissed, or rather, instead of dismissing a worker and making the remainder do his work, he is kept on and he and the others are put on part-time during the slack period. This is spreading the unemployment so that the whole lose a little time rather than that a number lose all the time. There is no doubt that this spreading of unemployment reduces hardships. If A and B each lose 15 weeks in a bad year, neither one is well off but then neither one needs to starve; if on the other hand A loses no time and B 30 weeks a serious social problem—relief and all the evils arising therefrom—ensues. Now the regular thing as we rise in the scale of industries (already explained), is the tendency for industries to dismiss and discard, *i.e.*, to leave B with 30 weeks loss of time. Furthermore the "part-time" work as it is usually understood (or misunderstood) refers to that in the industry which spreads the unemployment among A and B and is regarded as a bad thing, while the part-time in the second (or usual) kind of industry that gives B nothing else but part-time is not considered, merely because it is not measurable except at the time of a census and not much attention has heretofore been paid to what the census says. In other words there is no cognizance taken either in the reports of firms showing employees from month to month or in the reports of labour unions, of the B that *gets only part time*; all the latter think of is the B that *loses part time*.

Now, of course, our census obviously measures the number of B's that get only part time—they are the workers who lose 20, 30, 40 and so on weeks during the year. The interesting thing is that our study discloses also, at least in a measure, the B's who only *lose part time*. As we go up the scale of industries we find certain industries which on the whole lose little time on the average, *i.e.*, all the workers in that industry on an average lose so little time that the industry can be classed with the strong industries, but at the same time more of their workers lose *some* time than of the workers in other industries in the same part of the scale. On investigation, such industries are found to be of a nature that, for lack of a better term, we call "paternal," *i.e.*, they keep their workers attached during slack periods and *spread* the unemployment instead of dismissing some and giving full time to the remainder. A point that must be emphasized is that this spreading is symptomatic of a strong rather than a weak industry. It may be regarded as axiomatic that if there are two industries, each losing the same amount of time on the average—say, 5 weeks in the year—but in the case of the former 25 p.c. of the total staff lose *some* time (so that this 25 lose 20 weeks) while in the case of the latter 50 p.c. lose *some* time (so that this 50 p.c. lose only 10 weeks), then the latter gave part time and thus *spread* its unemployment. The probabilities are that in the case of the former some or most of the 25 p.c. will never get back into that industry while in the case of the latter they remain in that industry. Finally it would seem that "part time" as it is commonly understood, *i.e.*, as referring to those who only *lose part time* is of comparatively infrequent occurrence as compared with the other type, *viz.*, those who only *get part time*.

8. In view of the findings mentioned in §1 of this summary, a term was needed to express the process of graduation of the various industries. We found that some industries from the workers' viewpoint were really sources of permanent attachment, *i.e.*, industries in the real sense of the term; others, however, from the workers' viewpoint were really only sources of indeterminate and sporadic employment. The necessity was to find a term to differentiate between

the two extremes. The most apt term seemed to be the "degree of organization"—the extremes being the "loosely organized industry" and the "highly organized industry." The former type shows no tendency to maintain a solid full-time working force while the latter type does. There has been a tendency for industries through time to evolve from the former to the latter stage. However, all industries have not been acted upon to the same extent—so that in the year 1931 we have an array of industries showing wide differences in the "degree of organization."

It is unfortunate that the term "organization," with reference to industry has already been used to express two concepts which have been usually working at cross purposes. These are (1) the industrial organization promoted by the owners of industry. This type of organization has been used to increase efficiency by improved plant, adequate systems of accounting, selection of personnel, etc. The motive being to increase profits, there has been little regard for the condition of the human element. (2) The organization of sections of the labour force to prevent themselves from undue exploitation by the owners of the industry. This is in reality an organization of certain occupations to protect their own special interests in a number of different industries and, therefore, if we consider industries as units, this type of organization is really "occupational." Being strictly occupational, the condition of the great bulk of workers, unskilled and near-unskilled, is not represented or aided in any way by this form of organization.

A term is still necessary therefore to express the condition of the *whole* working body of an industry, *i.e.*, the condition of skilled and unskilled workers and the extent to which the industry is able to maintain this working force continuously. We submit this concept of "organization" as being the true usage of the word when applied to the industry.

CHAPTER IV

UNEMPLOYMENT IN RELATION TO THE OCCUPATIONAL STRUCTURE

Data and Methods Used:—Any discussion of unemployment in industries is incomplete without a treatment of unemployment by occupations. Unemployment which can be measured is confined to that of wage-earners and it is obvious that the total time lost in industry must equal the total time lost by all occupations. We have attempted to analyse, by a sample, the dispersion of this time lost among the various industries. In doing so we found that there was a nearly normal distribution—such skewness as occurred being in part due to the necessary exclusion of those wage-earners with "unspecified" industrial attachment* which lowered the centre of revolution of the sample as compared with the whole.

It is our purpose in this chapter to study the dispersion of unemployment among the various occupations by the use of a sample similar to that used in industries. If the samples are sufficiently alike we shall be able to find out if there are any significant differences in the dispersion of unemployment (1) by industry, (2) by occupation. With regard to occupations we are forced to exclude the group "unskilled."† This group has some features in common with the industry class "unspecified." The following statement shows some comparative figures for all-Canada males.

LXVII.—COMPARISON OF UNSKILLED OCCUPATION GROUP AND UNSPECIFIED INDUSTRY GROUP, CANADA, JUNE 1, 1931

Item	Unskilled Occupation	Unspecified Industry
Number of male wage-earners.....	422,284	165,172
Percentage not at work June 1.....	38·28	54·54
Percentage of all male wage-earners.....	20·88	8·17
Percentage of number not at work June 1.....	38·28	21·34

A cross-classification of industry by occupation shows that of the 165,172 wage-earners with "Unspecified" industrial attachment, 158,774 or over 96 p.c. were unskilled workers. The type of worker therefore in the unspecified industry is nearly identical with that in the unskilled occupation. This leads to an observation which, while it is not connected with the analysis of the sample, is worthy of mention. Those unskilled workers who have a specified industrial attachment, numbering 275,140 males, by virtue of being definitely connected with a specific industry suffer only half as much unemployment as those who have no specific industrial attachment.

LXVIII.—UNSKILLED MALE WAGE-EARNERS NOT AT WORK WITH AND WITHOUT DEFINITE INDUSTRIAL ATTACHMENT, CANADA, JUNE 1, 1931

Item	Male Wage-Earners		
	Total	Not at Work June 1	
		No.	P.C.
Unskilled.....	422,284	161,631	38·28
Without definite industrial attachment.....	158,774	80,305	54·54
With definite industrial attachment.....	275,140	75,036	27·27

From the above we see therefore, that our sample is representing all occupations other than unskilled will be of a slightly different universe than the sample of all industries other than unskilled.

LXIX.—MALE WAGE-EARNERS NOT AT WORK IN ALL OCCUPATIONS AND IN UNIVERSE SAMPLED, CANADA, JUNE 1, 1931

Item	Male Wage-Earners		
	Total	Not at Work June 1	
		No.	P.C.
All occupations.....	2,022,260	422,078	20·87
Unskilled.....	422,284	161,631	38·28
Universe sampled.....	1,599,976	260,445	16·28

Our sample therefore should show a figure of unemployment somewhat near 16·28 p.c.

* See method of enumeration of 1931 Census.

† Census group "Labourers and unskilled workers (not agricultural, mining, or logging)."

A scatter diagram was constructed similar to that used in the previous chapter showing unemployment on June 1 for different sizes of occupation groups. The object again was to secure a sufficient number of occupations homogeneous as to size and at the same time showing all amounts of unemployment from the highest to the lowest and having an average unemployment comparable to that of its universe. It can be seen that a sample of this sort would be valuable only if it were found that pure size of occupation group had no significant effect on the amount of unemployment. This was found to be the case in male occupations, i.e., the trend of the probability of a person being unemployed in different size groups was linear. However, it was found that if the groups "Unskilled" were included in the scatter diagram, they imparted a non-linear trend to the unemployment, i.e., the larger the occupation groups, the greater the unemployment. Obviously the reason for this is that the unskilled groups when taken by provinces are the largest individual occupation groups. We have now to ask ourselves if we are justified in omitting the unskilled in taking a sample. It is necessary to regard two aspects of this group.

First, is it because of their larger numbers that unemployment is greater in the unskilled groups? In a sense it is. The unskilled are those who because of lack of training, ability or

LXX.—SCATTER DIAGRAM SHOWING FREQUENCY DISTRIBUTION OF OCCUPATIONS, ACCORDING TO NUMBER OF MALE WAGE-EARNERS EMPLOYED IN RELATION TO INTERVALS OF NUMBER NOT AT WORK FOR ALL CAUSES, CANADA, JUNE 1, 1931

No.	Interval of Number Not at Work June 1	Occupations Having Male Wage-Earners Numbering								
		0-249	250-499	500-749	750-999	1,000-1,999	2,000-2,999	3,000-3,999	4,000-4,999	5,000-5,999
1	0-24.....	1,184	108	27	7	5	1			
2	25-49.....	108	86	13	5	12	3		1	
3	50-74.....	18	64	26	8	14	4	2		
4	75-99.....	2	27	21	8	11	1			1
5	100-199.....	2	39	42	30	28	9	2		1
6	200-299.....		2	13	10	23	13	1		1
7	300-399.....				5	① 18	8	3	4	2
8	400-499.....					7	5	3	1	1
9	500-599.....					6	6	4	1	1
10	600-699.....					2	3	1		
11	700-799.....					2	3	2	1	1
12	800-899.....						2	1		4
13	900-999.....					1	1	3	1	
14	1,000-1,499.....						3	3	2	1
15	1,500-1,999.....						3			1
16	2,000-2,999.....								2	
17	3,000-4,999.....									1
18	5,000-6,999.....									
19	7,000-9,999.....									
20	10,000-12,999.....									
21	13,000-15,999.....									
22	16,000-19,999.....									
23	20,000-29,999.....									
24	30,000-60,000.....									
25	Total.....	1,314	326	142	73	129	65	25	13	15
26	Average number not at work.....	15.56	53.03	97.44	139.93	223.26	450.19	595.00	895.15	855.83
27	Percentage not at work.....	12.45	14.14	15.59	16.00	14.88	18.01	17.00	19.89	15.56
28	Percentage not at work including unskilled.....					14.95				

Sample

opportunity have not been successful in aligning themselves with any of the more specialized occupations. In an economy such as we possess it is perhaps inevitable that this group be large. It also follows that, due to specialization in methods of production, the demand for the unskilled labourer is decreasing. From this standpoint, therefore, we would *not* be justified in excluding the unskilled occupation group.

Secondly, can we truly call the "Unskilled" an occupation group? This group according to census definition consists of labourers and unskilled workers other than those engaged in agriculture, mining and logging. This exclusion of certain types of labourer is not purely arbitrary as it is argued that the excluded types are on the whole doing somewhat more specialized work.

The unskilled group then, comprises a very wide variety of occupations all of which have one factor in common—a very low degree of required specialized skill. In other respects the group is anything but homogeneous. Therefore the group is not so much an "occupation" as an aggregate of workers who lack a real occupation under present conditions of fine division of labour.

For our purpose (an analysis of the dispersion of unemployment by occupation) therefore, we are choosing our sample from all occupations excluding the unskilled groups. In this way our

LXX.—SCATTER DIAGRAM SHOWING FREQUENCY DISTRIBUTION OF OCCUPATIONS, ACCORDING TO NUMBER OF MALE WAGE-EARNERS EMPLOYED IN RELATION TO INTERVALS OF NUMBER NOT AT WORK FOR ALL CAUSES, CANADA, JUNE 1, 1931

Occupations Having Male Wage-Earners Numbering												Total	Σ
0,000-6,999	7,000-7,999	8,000-8,999	9,000-9,999	10,000-14,999	15,000-19,999	20,000-29,999	30,000-49,999	50,000-99,999	70,000-99,999	100,000-129,999	130,000-160,000		
												1,332	1
												228	2
												138	3
												71	4
												153	5
												63	6
												40	7
												18	8
												19	9
												11	10
												9	11
												7	12
												8	13
												18	14
												5	15
												12	16
												6	17
												5	18
												2	19
												1	20
												1	21
												1	22
												1	23
												1	24
												2,143	25
835-71	1,502-80	2,025-00	1,358-33	3,541-60	3,500-00	4,583-33	4,833-33	6,000-00					26
12-80	21-24	30-88	14-30	28-33	20-00	18-33	12-08	10-00					27
					30-29	24-44	20-31				34-48		28

sample is representative of all but those workers who have no special occupational status. If we were to include the unskilled groups we could not obtain a sample homogeneous as to size—a factor the importance of which was stressed in the chapter on industries. The unskilled occupation group will, therefore, be separately dealt with as it is apparently impossible to combine it on a plane with other occupation groups. It is different in size and in unemployment and can properly be dealt with only as a resultant of the general condition of other occupations.

The Sample.—It was found that those occupations having between 2,000 and 6,000 wage-earners were numerically sufficient to show a typical variety of unemployment and also to show a total unemployment corresponding to that of all wage-earners in Canada excluding the unskilled. The sample consisted of 389,015 male wage-earners, of whom 67,466 or 17.34 p.c. were not at work for all causes on June 1. The average time lost by the wage-earner in the sample was 8.84 weeks or 17.00 p.c. of the year preceding June 1, 1931. This figure was somewhat larger than that of the universe—all male wage-earners less the unskilled—in which the percentage not at work on June 1 was 16.28. The difference, however, is within three times the "error of random sample," which means that the figure of the sample is reliable.

It will be seen from Statement LXXI that the sample is very representative regionally—in fact, more so than the sample of industries.

Differences between Distribution of Unemployment by Industries and by Occupations.—The fact that the samples contain (1) the same size groups, (2) an aggregate of nearly the same number of wage-earners having quite similar aggregate unemployment makes it possible to observe the behaviour of the different criteria of unemployment. What differences are there in the dispersion of unemployment when regarded from the point of view of occupation and of industry?

In Statement LXXII we show unemployment by four criteria:—

- (1) percentage of wage-earners not at work June 1,
- (2) percentage of working time lost during the year ended June 1,
- (3) percentage of wage-earners who lost any time,
- (4) average time lost by those wage-earners losing time.

These four criteria were obtained for each of the 118 occupations and indexed with "all-Canada wage-earners" as base 100. In this way it was possible to compare industries with occupations.

LXXI.—SELECTED SAMPLE OF 118 OCCUPATIONS IN THE NINE PROVINCES, SHOWING MALE WAGE-EARNERS, NUMBER AND PERCENTAGE NOT AT WORK JUNE 1, NUMBER AND PERCENTAGE LOSING TIME DURING YEAR, TOTAL AND AVERAGE WEEKS LOST PER WAGE-EARNER AND TOTAL AND AVERAGE WEEKS LOST PER WAGE-EARNER LOSING TIME, CANADA, YEAR ENDED JUNE 1, 1931

Province	Occupation	Male Wage-Earners				Weeks Lost					
		Total	Not at Work June 1		Losing Time during Year		Total	Average per Wage-Earner		Average per Wage-Earner Losing Time	
			No.	P.C.	No.	P.C.		No.	P.C. of Year	No.	P.C. of Year
P.E.I.	Farm labourers.....	2,195	66	3.01	249	11.34	4,298	1.96	3.77	17.26	33.19
N.S.	Fishermen.....	2,652	269	10.14	834	31.45	17,390	6.56	12.62	20.85	40.10
	Labourers (Coal Mining).....	3,534	1,438	40.69	3,241	91.71	83,131	23.52	45.23	25.65	49.33
	Carpenters.....	3,671	1,031	28.08	2,404	65.49	51,434	14.01	26.94	21.40	41.15
	Salesmen.....	3,181	232	7.29	609	19.14	12,495	3.93	7.56	20.52	39.46
	Office clerks.....	2,626	197	7.50	460	17.52	8,899	3.39	6.52	19.35	37.21
N.B.	Farm labourers.....	5,835	851	14.58	2,191	37.55	45,627	7.82	15.04	20.82	40.04
	Lumbermen.....	2,610	1,216	46.59	1,095	76.44	48,208	18.47	35.52	24.16	46.46
	Carpenters.....	2,374	584	24.60	1,437	60.53	36,193	12.72	24.45	21.01	40.40
	Salesmen.....	2,551	168	6.59	480	18.82	9,503	3.73	7.17	19.80	38.08
	Office clerks.....	2,259	142	6.29	390	17.26	7,151	3.17	6.10	18.34	35.27

n.e.s.—not elsewhere specified.

n.s.—not specified.

LXXI.—SELECTED SAMPLE OF 118 OCCUPATIONS IN THE NINE PROVINCES, SHOWING MALE WAGE-EARNERS, NUMBER AND PERCENTAGE NOT AT WORK JUNE 1, NUMBER AND PERCENTAGE LOSING TIME DURING YEAR, TOTAL AND AVERAGE WEEKS LOST PER WAGE-EARNER AND TOTAL AND AVERAGE WEEKS LOST PER WAGE-EARNER LOSING TIME, CANADA, YEAR ENDED JUNE 1, 1931—Cos.

Province	Occupation	Male Wage-Earners				Weeks Lost					
		Total	Not at Work June 1		Losing Time during Year		Total	Average per Wage-Earner		Average per Wage-Earner Losing Time	
			No.	P.C.	No.	P.C.		No.	P.C. of Year	No.	P.C. of Year
Que.....	Miners (Other Mining).....	2,338	930	39.78	1,500	64.16	38,401	16.42	31.58	25.60	49.23
	Labourers—mines and quarries.....	2,428	719	29.61	1,523	62.73	32,887	13.54	26.04	21.59	41.53
	Bakers.....	2,482	363	14.63	708	32.15	17,824	7.18	13.81	22.34	42.95
	Butchers and slaughterers.....	2,689	370	13.78	863	32.09	18,400	6.71	12.90	20.00	40.19
	Machine operators—boots and shoes.....	3,712	758	20.42	2,204	59.38	47,897	12.90	24.81	21.73	41.79
	Weavers.....	2,378	298	12.63	1,133	47.65	20,683	8.70	16.73	18.26	35.12
	Tailors.....	3,071	965	31.42	1,818	59.20	41,418	13.49	25.94	22.78	43.81
	Compositors, printers, n.e.....	2,397	299	12.47	705	29.41	13,894	5.80	11.15	19.71	37.90
	Blacksmiths, hammermen, and forgers.....	2,436	476	19.54	1,149	47.17	23,892	9.81	18.87	20.79	39.98
	Boiler firemen.....	2,167	350	16.15	959	44.25	17,552	8.10	15.58	18.30	35.19
	Stationary engineers.....	2,535	405	15.67	931	36.73	18,890	7.45	14.33	20.29	39.02
	Brick and stone masons.....	2,949	1,036	35.21	2,305	78.35	58,853	20.00	38.46	25.63	49.10
	Plumbers, steam fitters, and gas fitters.....	4,623	1,024	22.04	2,529	55.01	52,193	11.54	22.19	20.64	39.69
	Section foremen, sectionmen, trackmen.....	2,873	230	8.01	900	31.33	16,095	5.60	10.77	17.88	34.39
	Longshoremen and stevedores.....	2,061	698	28.60	1,668	79.77	40,639	19.44	37.39	24.36	46.85
	Seamen, sailors, and deckhands.....	3,132	419	13.38	900	28.74	21,089	6.73	12.94	23.43	45.06
	Chauffeurs and bus drivers.....	5,835	867	14.86	2,020	34.62	45,570	7.81	15.02	22.56	43.39
	Deliverymen and drivers, n.e.....	2,336	238	10.19	778	33.02	16,962	7.20	13.55	21.80	41.92
	Teamsters, draymen, carriage drivers.....	5,377	861	16.01	2,381	44.28	50,942	9.47	18.21	21.40	41.15
	Messengers.....	4,197	453	10.79	1,093	26.04	26,824	6.39	12.29	24.55	47.21
	Shippers.....	3,526	371	10.52	1,040	29.50	18,557	5.26	10.12	17.84	34.31
	Managers—retail stores.....	2,946	88	2.99	252	8.55	4,393	1.49	2.87	17.43	33.62
	Insurance agents.....	3,952	182	4.59	499	12.69	10,798	2.73	5.25	21.64	41.62
	Public service officials.....	2,296	43	1.87	135	5.88	2,300	1.00	1.92	17.04	32.77
	Police and detectives.....	3,087	101	3.27	263	8.52	4,537	1.47	2.83	17.25	33.17
	Accountants and auditors.....	4,264	325	7.62	487	11.42	14,238	3.34	6.42	29.22	56.19
	Clergymen and priests.....	2,844	7	0.25	14	0.49	334	0.13	0.23	47.71	91.76
Teachers—school.....	2,981	67	2.25	120	4.23	3,029	1.03	1.96	24.04	46.23	
Cooks.....	3,869	900	23.49	1,746	45.13	36,068	9.98	19.19	22.11	42.52	
Domestic servants.....	2,915	216	7.41	649	22.26	13,607	4.67	8.88	20.97	40.33	
Janitors and sextons.....	2,687	123	4.55	358	13.84	7,624	2.95	5.67	21.30	40.96	
Waiters.....	3,516	499	14.19	1,162	33.05	24,549	6.98	13.42	21.13	40.64	
Watchmen and caretakers.....	4,164	370	8.89	1,143	27.45	24,734	5.94	11.42	21.61	41.62	
Ont.....	Labourers—mines and quarries.....	3,803	793	20.85	2,251	59.19	53,860	14.18	27.23	23.93	46.02
	Bakers.....	3,599	539	14.98	1,254	34.84	27,592	7.67	14.75	22.00	42.31
	Butchers and slaughterers.....	3,826	542	14.17	1,373	35.89	29,581	7.73	14.87	21.54	41.42
	Tailors.....	2,680	848	31.57	1,694	63.07	41,728	15.54	29.88	24.63	47.37
	Cabinet and furniture makers.....	2,103	480	22.82	1,199	57.01	23,311	11.08	21.31	19.44	37.39
	Compositors, printers, n.s.....	5,025	520	10.35	1,496	29.77	28,447	5.66	10.88	19.02	36.98
	Foremen and overseers—Metal Products (Mfg.).....	3,185	329	10.33	1,165	36.68	21,568	6.78	13.04	18.53	35.64
	Blacksmiths, hammermen, and forgers.....	3,468	887	25.58	2,037	58.74	47,318	13.64	26.23	23.23	44.67
	Fitters, assemblers, and erectors—Metal Products (Mfg.).....	2,700	796	29.48	1,973	73.07	47,097	17.44	33.54	23.87	45.90
	Machine tenders, n.e.s.—Metal Products (Mfg.).....	2,931	724	24.70	2,157	73.59	61,126	17.44	33.54	23.70	45.58
	Moulders, coremakers, and casters—Metal Products (Mfg.).....	5,092	1,738	34.09	3,015	76.89	100,768	19.70	38.06	25.74	49.60
	Tool makers, die cutters and sinkers—Metal Products (Mfg.).....	2,494	651	26.09	1,674	67.11	35,629	14.29	27.48	22.64	43.54
	Boiler firemen.....	2,299	388	16.88	1,027	44.67	18,655	8.55	16.44	19.14	36.81
	Brick and stone masons.....	4,633	2,045	44.14	3,797	81.96	109,511	23.64	45.46	28.84	56.46
	Plumbers, steam fitters, and gas fitters.....	5,223	1,475	28.24	3,159	60.48	70,924	13.58	26.12	22.45	43.17
	Sheet metal workers and tin-smiths.....	2,690	666	24.68	1,091	62.65	37,618	13.04	26.81	22.25	42.79
	Foremen and inspectors—steam railway.....	2,051	80	3.90	375	18.29	4,834	2.36	4.54	12.88	24.79
	Brakemen.....	3,048	678	22.24	1,357	44.52	25,052	9.35	17.98	21.00	40.39
	Locomotive engineers.....	2,983	189	6.04	674	22.60	10,079	3.38	6.09	14.95	28.75
	Locomotive firemen.....	2,243	527	23.50	1,071	47.75	22,358	9.97	19.17	20.88	40.15
	Seamen, sailors, and deckhands.....	3,854	568	14.74	1,297	33.65	33,664	8.73	16.79	25.95	49.90
	Chauffeurs and bus drivers.....	3,941	628	15.94	1,398	35.47	33,460	8.49	16.33	23.93	46.02
	Deliverymen and drivers, n.e.....	2,120	192	9.06	613	28.92	12,295	5.80	11.15	20.09	38.58
	Linemen and cablemen.....	3,330	427	12.80	1,268	38.01	21,514	6.45	12.40	16.97	32.64
	Messengers.....	4,912	568	11.56	1,439	29.30	35,317	7.19	13.83	24.54	48.12
	Postmen and mail carriers.....	2,946	38	1.29	187	6.35	2,637	0.90	1.73	14.10	27.12
	Telegraph operators.....	2,099	280	13.36	489	23.33	10,656	5.09	9.77	21.79	41.90

LXXI.—SELECTED SAMPLE OF 118 OCCUPATIONS IN THE NINE PROVINCES, SHOWING MALE WAGE-EARNERS, NUMBER AND PERCENTAGE NOT AT WORK JUNE 1, NUMBER AND PERCENTAGE LOSING TIME DURING YEAR, TOTAL AND AVERAGE WEEKS LOST PER WAGE-EARNER AND TOTAL AND AVERAGE WEEKS LOST PER WAGE-EARNER LOSING TIME, CANADA, YEAR ENDED JUNE 1, 1931.—Con.

Province	Occupation	Male Wage-Earners				Weeks Lost			
		Total	Not at Work June 1		Losing Time during Year		Total	Average per Wage-Earner	
			No.	P.C.	No.	P.C.		No.	P.C. of year
Ont.—									
Cont.	Packers, wrappers, and labellers (Warehousing and Storage).....	2,084	284	13.63	1,049	50.19	19,913	9.56	18.38
	Managers—retail stores.....	5,482	179	3.27	401	7.31	7,717	1.41	2.71
	Managers—wholesale, import, and export houses; commercial agencies.....	2,201	52	2.36	111	5.04	2,162	0.98	1.88
	Commercial travellers.....	5,729	381	6.65	859	14.99	20,130	3.51	6.75
	Sales agents, canvassers, demonstrators.....	2,361	180	7.62	385	16.31	9,740	4.13	7.94
	Officials—finance.....	2,053	30	1.45	61	2.96	1,174	0.57	1.10
	Insurance agents.....	5,485	262	4.78	750	13.67	16,697	3.04	5.85
	Public service officials.....	3,891	65	1.67	221	5.68	4,261	1.10	2.12
	Police and detectives.....	3,827	67	1.75	246	6.43	4,561	1.19	2.29
	Civil engineers and surveyors.....	2,330	221	9.48	414	17.77	9,079	3.90	7.50
	Clergymen and priests.....	4,091	32	0.78	51	1.25	1,074	0.26	0.50
	Designers and draughtsmen.....	2,378	280	11.77	600	25.61	12,013	5.05	9.71
	Teachers—school.....	5,218	96	1.84	214	4.10	4,232	0.81	1.56
	Barbers, hairdressers, manicurists.....	2,428	322	13.26	705	29.04	17,037	7.02	13.60
	Cooks.....	4,223	900	21.31	1,889	44.73	46,047	10.90	20.56
	Domestic servants.....	2,066	215	10.46	701	34.10	16,501	8.03	15.44
	Janitors and sextons.....	5,792	302	5.21	1,021	17.63	20,880	3.00	6.02
	Waiters.....	2,853	398	13.95	850	33.30	22,279	7.81	15.02
	Watchmen and caretakers.....	5,530	479	8.66	1,533	27.72	33,348	6.08	11.60
Man....	Mechanics, n.e.s.—Metal Products (Mfg.).....	2,294	526	22.93	1,135	49.48	27,649	12.05	23.17
	Carpenters.....	4,785	2,000	41.80	3,444	71.97	95,545	19.97	38.40
	Section foremen, sectionmen; trackmen.....	2,353	339	14.41	1,039	44.16	25,731	10.94	21.04
	Truck drivers.....	2,221	440	19.81	965	43.63	22,647	10.20	19.62
	Bookkeepers and cashiers.....	2,395	362	15.11	578	24.13	14,958	6.25	12.02
Sask....	Mechanics, n.e.s.—Metal Products (Mfg.).....	2,347	657	27.99	1,135	48.36	28,925	12.32	23.69
	Carpenters.....	2,948	1,518	51.49	2,233	75.75	85,899	22.34	42.96
	Section foremen, sectionmen; trackmen.....	3,268	349	10.69	1,287	39.38	31,550	9.65	18.56
	Purchasing agents and buyers.....	2,117	191	9.03	299	13.89	9,358	2.59	4.87
	Salesmen.....	5,337	843	15.80	1,348	25.26	32,652	6.11	11.75
	Teachers—school.....	2,420	150	6.20	262	10.83	6,348	2.62	5.04
	Office clerks.....	4,010	324	8.08	621	15.49	13,493	3.36	6.46
Alta....	Coal miners.....	5,594	3,769	67.38	4,743	84.79	135,294	24.19	46.52
	Mechanics, n.e.s.—Metal Products (Mfg.).....	2,440	629	25.78	1,158	47.48	28,417	11.65	22.40
	Carpenters.....	3,355	1,484	44.23	2,511	74.84	60,235	20.64	39.69
	Section foremen, sectionmen; trackmen.....	2,466	225	9.12	964	39.09	23,072	9.39	18.00
	Salesmen.....	5,532	793	14.33	1,436	25.96	34,126	6.17	11.87
	Office clerks.....	4,153	301	7.25	686	16.52	16,247	3.91	7.52
B.C....	Fishermen.....	2,914	1,667	57.21	1,992	68.36	54,757	18.79	36.14
	Coal miners.....	2,999	1,500	50.02	2,717	90.60	70,611	23.54	45.27
	Miners (Other Mining).....	2,745	1,206	43.90	2,108	76.79	54,560	19.39	35.25
	Mechanics, n.e.s.—Metal Products (Mfg.).....	3,542	917	25.89	1,796	50.71	43,958	12.41	23.87
	Stationary engineers.....	2,952	815	27.61	1,682	56.98	41,487	14.00	27.02
	Section foremen, sectionmen; trackmen.....	2,673	217	8.12	1,201	44.94	24,928	9.33	17.94
	Seamen, sailors, and deckhands.....	2,194	504	22.97	748	34.09	19,684	8.97	17.25
	Truck drivers.....	4,113	756	18.62	1,928	46.88	41,724	10.15	19.58
	Cooks.....	4,460	1,189	26.66	1,621	43.07	58,033	13.02	25.04
	Bookkeepers and cashiers.....	2,667	412	15.45	698	26.17	18,155	6.81	13.10
	Total—118 occupations.....	389,015	67,466	17.34	147,052	37.80	3,441,199	8.84	17.00
All Canada—									
	Males (base).....	2,022,260	422,076	20.87	889,743	44.00	21,607,100	10.68	20.34
	"Unskilled".....	422,284	161,531	38.28	292,202	69.20	8,013,750	18.98	36.50
	Males less "Unskilled".....	1,599,976	260,445	16.28	597,541	37.35	13,593,350	8.50	16.35

LXXII.—COMPARISON OF INDICES OF FOUR CRITERIA OF UNEMPLOYMENT IN THE 118 OCCUPATIONS OF THE SAMPLE, MALES ONLY, CANADA, YEAR ENDED JUNE 1, 1931

Province	Occupation	Index of			
		Weeks Lost by All Male Wage-Earners	P.C. Not at Work June 1	P.C. Losing Time	Weeks Lost by Male Wage-Earners Losing Time
Alta.	Coal miners.....	226	323	193	117
Ont.	Brick and stone masons.....	221	212	186	119
N.S.	Labourers (Coal Mining).....	220	195	208	106
B.C.	Coal miners.....	220	240	200	107
Sask.	Carpenters.....	209	247	172	122
Alta.	Carpenters.....	193	212	170	114
Que.	Brick and stone masons.....	187	169	178	105
Man.	Carpenters.....	187	200	164	114
B.C.	Miners (Other Mining).....	186	210	175	107
Ont.	Moulders, coremakers, and casters—Metal Products (Mfg.).....	185	163	175	106
Que.	Longshoremen, stevedores.....	182	137	181	100
B.C.	Fishermen.....	176	274	155	113
N.B.	Lumbermen.....	173	223	174	100
Ont.	Fitters, assemblers, and erectors—Metal Products (Mfg.).....	163	141	168	98
Ont.	Machine tenders, n.e.s.—Metal Products (Mfg.).....	163	118	167	98
Que.	Miners (Other Mining).....	154	191	146	105
Ont.	Tailors.....	145	151	143	101
Ont.	Tool makers, die cutters and sinkers—Metal Products (Mfg.).....	134	106	143	93
Ont.	Labourers—mines and quarries.....	133	109	135	99
B.C.	Stationary engineers.....	132	132	129	102
N.S.	Carpenters.....	131	135	149	88
Ont.	Sheet metal workers and tinsmiths.....	131	118	142	92
Ont.	Blacksmiths, hammermen, and forgesmen.....	128	123	133	96
Que.	Labourers—mines and quarries.....	127	142	143	89
Ont.	Plumbers, steam fitters, and gas fitters.....	127	135	137	92
Que.	Tailors.....	126	151	135	94
B.C.	Cooks.....	122	128	98	125
Que.	Machine operators—boots and shoes.....	121	98	135	90
N.B.	Carpenters.....	119	118	138	87
B.C.	Mechanics, n.e.s.—Metal Products (Mfg.).....	116	124	115	101
Sask.	Mechanics, n.e.s.—Metal Products (Mfg.).....	115	134	110	105
Man.	Mechanics, n.e.s.—Metal Products (Mfg.).....	113	110	112	100
Alta.	Mechanics, n.e.s.—Metal Products (Mfg.).....	109	124	108	101
Que.	Plumbers, steam fitters, and gas fitters.....	108	108	127	85
Ont.	Cabinet and furniture makers.....	104	109	130	80
Ont.	Cooks.....	102	102	102	100
Man.	Section foremen, sectionmen; trackmen.....	102	69	100	102
Man.	Truck drivers.....	96	95	99	98
B.C.	Truck drivers.....	95	89	107	89
Que.	Cooks.....	93	113	103	91
Ont.	Locomotive firemen.....	93	113	109	86
Que.	Blacksmiths, hammermen, and forgesmen.....	92	94	107	86
Sask.	Section foremen, sectionmen; trackmen.....	90	51	89	101
Que.	Teamsters, draymen, carriage drivers.....	89	77	101	88
Ont.	Packers, wrappers, and labellers (Warehousing and Storage).....	89	65	114	78
Ont.	Brakemen.....	88	91	101	87
Alta.	Section foremen, sectionmen; trackmen.....	88	44	89	99
B.C.	Section foremen, sectionmen; trackmen.....	87	39	103	86
B.C.	Seamen, sailors, and deckhands.....	84	110	77	108
Ont.	Seamen, sailors, and deckhands.....	82	71	76	107
Que.	Weavers.....	81	00	108	75
Ont.	Boiler firemen.....	80	81	102	79
Ont.	Chauffeurs and bus drivers.....	80	76	81	99
Que.	Boiler firemen.....	79	77	101	75
Ont.	Domestic servants.....	79	50	77	97
N.B.	Farm labourers.....	73	70	85	86
Que.	Chauffeurs and bus drivers.....	73	71	79	93
Ont.	Waiters.....	73	67	76	97
Ont.	Bakers.....	72	72	79	91
Ont.	Butchers and slaughtermen.....	72	68	82	89

n.e.s.—not elsewhere specified. n.s.—not specified.

LXXII.—COMPARISON OF INDICES OF FOUR CRITERIA OF UNEMPLOYMENT IN THE 118 OCCUPATIONS OF THE SAMPLE, MALES ONLY, CANADA, YEAR ENDED JUNE 1, 1931—Con.

Province	Occupation	Index of			
		Weeks Lost by All Male Wage-Earners	P.C. Not at Work June 1	P.C. Losing Time	Weeks Lost by Male Wage-Earners Losing Time
Que.	Stationary engineers.....	70	75	83	84
Que.	Bakers.....	67	70	73	92
Que.	Deliverymen and drivers, n.s.....	67	48	75	90
Ont.	Messengers.....	67	55	67	105
Ont.	Barbers, hairdressers, manicurists.....	66	64	66	100
Que.	Waiters.....	65	68	75	87
B.C.	Bookkeepers and cashiers.....	64	74	59	107
Que.	Butchers and slaughterers.....	63	66	73	86
Que.	Seamen, sailors, and deckhands.....	63	64	65	97
Ont.	Foremen and overseers—Metal Products (Mfg.).....	63	49	83	76
N.S.	Fishermen.....	61	49	71	85
Que.	Messengers.....	60	52	59	101
Ont.	Linemen and cablemen.....	60	61	86	70
Man.	Bookkeepers and cashiers.....	59	72	55	107
Alta.	Salesmen.....	58	69	59	98
Sask.	Salesmen.....	57	76	57	100
Que.	Watchmen and caretakers, n.e.s.....	56	43	62	89
Ont.	Watchmen and caretakers, n.e.s.....	56	41	63	90
Que.	Compositors; printers, n.s.....	56	60	87	81
Ont.	Deliverymen and drivers, n.s.....	56	45	66	83
Ont.	Compositors; printers, n.s.....	53	50	68	78
Que.	Section foremen, sectionmen; trackmen.....	52	38	71	74
Que.	Shippers.....	49	50	67	73
Ont.	Telegraph operators.....	48	64	53	90
Ont.	Designers and draughtsmen.....	47	56	58	81
Que.	Domestic servants.....	44	36	51	86
Ont.	Sales agents, canvassers, demonstrators.....	39	37	37	104
N.S.	Salesmen.....	37	35	43	85
Ont.	Civil engineers and surveyors.....	37	45	40	90
Alta.	Office clerks.....	37	45	38	98
N.B.	Salesmen.....	35	32	43	82
Ont.	Janitors and sextons.....	34	26	40	84
Ont.	Commercial travellers.....	33	32	34	97
N.S.	Office clerks.....	32	30	40	80
Ont.	Locomotive engineers.....	32	29	51	82
Que.	Accountants and auditors.....	31	37	26	120
Sask.	Office clerks.....	31	39	35	90
N.B.	Office clerks.....	30	30	39	76
Que.	Janitors and sextons.....	28	23	31	88
Ont.	Insurance agents.....	28	23	31	92
Que.	Insurance agents.....	26	22	29	89
Sask.	Teachers—school.....	25	30	25	100
Sask.	Purchasing agents and buyers.....	24	43	32	75
Ont.	Foremen and inspectors—steam railway.....	22	19	42	53
P.E.I.	Farm labourers.....	18	14	24	71
Que.	Managers—retail stores.....	14	14	19	72
Que.	Police and detectives.....	14	10	19	71
Ont.	Managers—retail stores.....	13	16	17	79
Ont.	Police and detectives.....	11	8	15	78
Que.	Teachers—school.....	10	11	10	99
Ont.	Public service officials.....	10	8	13	79
Que.	Public service officials.....	9	9	13	70
Ont.	Managers—wholesale, import, and export houses; commercial agencies.....	9	11	11	80
Ont.	Postmen and mail carriers.....	8	6	14	58
Ont.	Teachers—school.....	8	9	9	81
Ont.	Officials—finance.....	5	7	7	79
Ont.	Clergymen and priests.....	2	4	3	87
Que.	Clergymen and priests.....	1	1	1	87
	Mean.....	83	83	88	92

The following statement gives features in the two dispersions essential to an analysis of differences.

LXXIII.—COMPARISON OF INDUSTRIES AND OCCUPATIONS AS REGARDS THREE CRITERIA OF UNEMPLOYMENT, CANADA, YEAR ENDED JUNE 1, 1931

Measure of Unemployment	Industries		Occupations	
	Index	Weeks	Index	Weeks
(1) Average time lost by all wage-earners in group—				
Mean.....	75	7.9	83	8.7
Standard deviation.....	46.0	4.8	56	5.8
Skew.....	-.346	-	-.260	-
(2) Average time lost by wage-earners losing time ¹ —				
Mean.....	88	21.4	92	22.4
Standard deviation.....	15.1	3.6	13.2	3.2
Skew.....	-.009	-	-.071	-
(3) Percentage of wage-earners losing time ¹ —		p.c.		p.c.
Mean.....	83	36.5	86	37.8
Standard deviation.....	42.6	18.8	51	22.3
Skew.....	-.132	-	-.148	-

¹ More than one week during year.

The differences are not great enough to warrant any conclusive deductions and could be due to the slightly different characters of the samples.

Before going into the actual comparison of occupational and industrial unemployment we must remember that there are bound to be certain points of similarity due to the fact that some industries are composed almost entirely of a dominant occupation. An example is the industry "Religion." Over 90 p.c. of the wage-earners in this industry are of the occupation "Clergymen and Priests." This occupation is confined to one industry; therefore the unemployment in this industry must be nearly identical with that in its dominant occupation. This occupation is very skilled and specialized—but this identity between occupation and industry, while most emphasized in the low unemployment group, also occurs at the other end of the scale. Take for example the industry "Logging" where over 70 p.c. of the wage-earners are "Lumbermen" by occupation. The unemployment in the industry and dominant occupation must resemble each other closely.

However, most industries are very diversified as to occupational content, and conversely most occupations are found in many industries. It is the scatter of occupations among industries which makes an investigation of unemployment differences of some interest.

Our purpose is to find out what relation the duration of unemployment has to the percentage of wage-earners who lose time. Accordingly we prepared four correlations—three for occupations and one for industry—to be used as a comparison. We have chosen three different representatives for occupations in order to show conclusively that our observations are not peculiar to our sample but are characteristic of the behaviour of occupations.

The 118 occupations of the sample show a very high positive correlation between the percentage losing time and the median duration of unemployment. That is, in an occupation where a small percentage of the wage-earners lose time, those losing time lose less time than is the case in an occupation having a large percentage of its wage-earners losing time.

To show that the correlation was not due to the sample we took 200 selected occupations, 40 from each one of the following five zones: the Maritime Provinces, Quebec, Ontario, the Prairie Provinces, British Columbia.* The result was an even higher correlation between the percentage losing time and the mean duration. This correlation is a reality in occupations but it will be recalled that in industries we found that there was less definite relation between the time lost by *all* wage-earners in the industry and the mean time lost by *those losing time*. However, as the average time lost by *all* wage-earners is not the same measurement as the percentage losing time, we have, in order to obtain strictly comparable data to obtain a measurement for the industries comparable to that of occupations.

Accordingly, we have prepared two scatter diagrams (Chart 5) showing the relation between mean duration of unemployment and the percentage of wage-earners losing time for occupations and for industries. The first half of the chart includes the 118 occupations used in the sample, while the second half shows the 122 industries of the sample used in the previous chapter.

* See Census of Canada, 1931, Vol. VI, Table 22

Note the strikingly different behaviour of the two sets of data. The industries are scattered rather haphazardly, while the occupations have a definite trend, i.e., the duration of unemployment varies to some extent as the variation of the percentage losing time. Stated in different terms, in a given occupation, if a high percentage of the members lose time, the average time lost by those losing time will be of long duration; if a small percentage lose time, the average duration of their unemployment will be short. This appears to be the fundamental rule in

LXXIV.—PERCENTAGES OF MALE WAGE-EARNERS LOSING TIME¹ IN THE 118 OCCUPATIONS OF THE SAMPLE, BY WEEK INTERVALS OF DURATION OF UNEMPLOYMENT, SHOWING MEDIAN AND MEAN NUMBER OF WEEKS LOST BY THOSE LOSING TIME, CANADA, YEAR ENDED JUNE 1, 1931

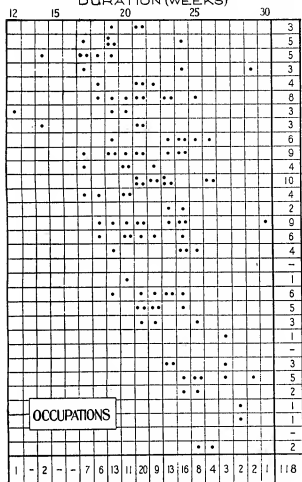
Province	Occupation	P.C. of Male Wage-Earners Losing Time in																	Weeks Lost by Those Losing Time	
		Total	Week Intervals of Duration of Unemployment																Median	Mean
			1-4	5-8	9-12	13-16	17-20	21-24	25-28	29-32	33-40	41-48	49-52							
N.S.	Labourers (Coal Mining)...	90.7	1.6	2.8	3.0	4.4	6.1	9.9	43.2	8.9	6.5	2.2	2.9	28.6	25.7					
B.C.	Coal miners.....	90.6	3.2	3.2	4.2	10.6	12.5	9.3	18.4	8.1	8.8	4.8	7.5	25.3	26.0					
Alta.	Coal miners.....	84.8	1.8	1.9	4.8	4.3	7.7	5.1	17.1	13.2	21.6	4.8	2.8	28.8	28.5					
Ont.	Brick and stone masons.....	82.0	1.9	3.0	5.2	5.9	7.0	7.2	13.6	9.8	13.8	6.8	7.7	28.1	28.8					
Que.	Longshoremen and stevedores.....	79.8	2.5	2.9	4.5	6.9	13.9	13.1	15.9	7.8	6.9	2.5	2.8	23.8	24.4					
Que.	Brick and stone masons.....	78.3	2.8	4.5	6.2	7.2	9.3	8.2	12.7	8.3	9.8	4.7	4.5	25.4	25.5					
B.C.	Miners (Other Mining).....	76.8	8.2	5.5	5.3	6.2	5.0	5.8	8.0	7.3	12.0	6.0	7.5	26.2	25.9					
Ont.	Moulders, coremakers, and casters—Metal Products (Mfg.).....	76.9	3.2	5.2	7.0	7.1	6.9	7.0	14.3	6.4	8.4	4.0	7.4	25.7	25.7					
N.B.	Lumbermen.....	76.4	2.3	6.1	8.6	8.4	8.8	7.7	9.2	7.9	10.2	4.7	2.5	23.1	24.1					
Sask.	Carpenters.....	75.7	1.4	2.2	3.9	4.6	6.2	6.8	11.5	10.2	16.7	7.5	4.7	29.5	29.5					
Alta.	Carpenters.....	74.9	2.3	3.2	5.7	5.8	6.9	7.2	10.0	9.0	13.4	6.0	4.9	27.4	27.6					
Ont.	Machine tenders, n.e.s.—Metal Products (Mfg.).....	73.6	4.9	6.0	7.3	6.7	5.7	5.6	16.2	6.0	7.3	3.3	4.6	25.1	23.7					
Ont.	Fitters, assemblers, and erectors—Metal Products (Mfg.).....	73.1	5.1	6.1	7.4	6.1	7.0	6.3	12.5	6.0	7.7	3.9	5.0	24.2	23.9					
Man.	Carpenters.....	72.0	3.4	3.3	5.4	4.5	6.3	6.4	9.8	8.8	12.6	6.0	5.5	27.7	27.7					
N.S.	Fishermen.....	68.4	0.7	1.4	3.1	5.0	8.4	7.8	13.0	10.4	12.3	3.7	2.0	27.3	27.5					
Que.	Carpenters.....	65.5	3.7	5.7	9.3	7.3	8.1	7.1	10.1	4.9	5.4	1.9	2.2	20.4	21.4					
Que.	Miners (Other Mining).....	64.2	6.6	7.0	5.5	3.9	4.4	3.9	7.9	4.1	7.1	4.7	8.8	25.4	25.6					
Ont.	Tailors.....	63.1	2.7	4.6	6.7	5.8	6.3	6.3	11.3	5.9	6.1	1.9	5.9	24.4	24.6					
Ont.	Tool makers, die cutters and sinkers—Metal Products (Mfg.).....	63.1	6.7	5.9	6.7	5.2	4.8	4.2	10.7	6.3	5.7	2.6	4.3	23.2	22.6					
Que.	Labourers—mines and quarries.....	62.7	9.6	6.3	5.6	6.0	5.0	6.1	6.3	4.4	5.7	3.7	3.9	20.6	21.6					
Ont.	Sheet metal workers and tinsmiths.....	62.7	6.3	6.3	6.8	6.0	5.8	4.9	9.2	4.8	5.8	2.3	4.4	20.9	22.3					
N.B.	Carpenters.....	60.5	4.5	5.4	7.5	6.9	7.9	7.1	8.0	4.2	5.4	2.0	1.6	20.0	21.0					
Ont.	Plumbers, steam fitters, and gas fitters.....	60.5	5.9	6.6	6.7	5.8	5.5	4.3	8.1	4.3	6.1	2.6	4.6	20.8	22.5					
Ont.	Labourers—mines and quarries.....	59.2	3.5	4.3	6.2	6.5	6.7	6.1	7.5	5.0	6.3	2.6	4.4	22.5	23.9					
Que.	Tailors.....	59.2	3.0	5.7	8.4	6.9	5.7	6.5	7.7	3.9	4.9	1.8	5.0	21.1	22.8					
Que.	Machine operators—boots and shoes.....	59.4	6.4	5.7	7.1	6.8	5.6	4.8	8.4	3.5	5.0	2.2	4.2	19.7	21.7					
Ont.	Blacksmiths, hammermen, and forgers.....	58.7	5.6	5.9	6.8	4.5	5.0	4.4	8.3	4.8	5.4	3.0	5.1	22.4	23.2					
Ont.	Cabinet and furniture makers.....	57.0	8.5	9.4	7.8	4.7	3.7	3.4	7.3	2.5	3.9	1.9	4.0	16.3	19.4					
B.C.	Stationary engineers.....	57.0	4.1	5.6	4.4	5.0	4.8	4.9	7.8	5.6	6.8	3.3	4.7	24.7	24.7					
Que.	Plumbers, steam fitters, and gas fitters.....	55.9	6.8	6.8	7.1	6.2	4.8	4.2	6.3	3.5	4.7	1.9	3.6	17.8	20.6					
B.C.	Mechanics, n.e.s.—Metal Products (Mfg.).....	50.7	4.9	4.2	4.5	3.9	4.7	3.9	6.9	4.1	6.2	2.8	4.7	24.3	24.5					
Ont.	Packers, wrappers, and labellers (Warehousing and Storage).....	50.2	8.0	7.2	6.6	4.6	4.2	2.8	5.9	2.8	3.6	2.0	2.6	15.9	19.0					
Man.	Mechanics, n.e.s.—Metal Products (Mfg.).....	49.5	4.6	3.8	4.4	4.4	4.2	4.6	6.2	4.3	6.1	2.7	4.1	23.9	24.4					
Sask.	Mechanics, n.e.s.—Metal Products (Mfg.).....	48.4	3.2	3.7	3.6	3.0	4.9	3.8	7.2	5.2	7.5	3.3	2.9	26.1	25.5					
Ont.	Locomotive firemen.....	47.7	6.8	6.0	4.8	3.8	3.6	4.1	5.5	3.9	5.2	1.3	2.7	19.8	20.9					
Alta.	Mechanics, n.e.s.—Metal Products (Mfg.).....	47.5	3.4	3.9	5.0	3.4	3.9	4.3	6.5	4.6	6.7	2.3	3.4	24.7	24.5					
Que.	Weavers.....	47.6	7.1	8.0	7.0	5.0	4.0	2.2	4.5	2.9	3.0	1.2	2.1	14.4	18.3					
B.C.	Truck drivers.....	46.9	4.9	4.8	4.9	5.3	4.0	3.9	6.3	3.6	4.6	2.5	2.6	17.5	21.7					
Que.	Blacksmiths, hammermen, and forgers.....	47.2	7.1	6.2	5.1	4.0	3.7	4.1	5.1	2.8	3.6	1.1	4.3	18.2	20.8					

n.e.s.—not elsewhere specified.

n.s.—not specified.

¹ More than one week.

MEAN DURATION OF UNEMPLOYMENT BY PER CENT LOSING TIME



P.C. LOSING TIME

0 up to 3

3

6

9

12

15

18

21

24

27

30

33

36

39

42

45

48

51

54

57

60

63

66

69

72

75

78

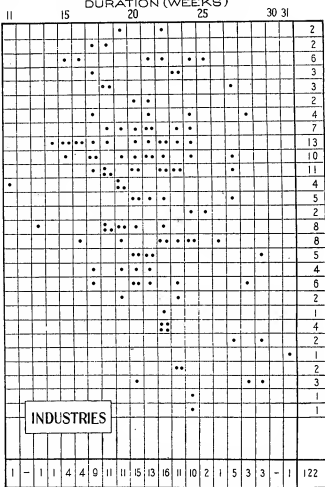
81 up to 84

84

87

up to 93, 90

TOTAL



MEAN P.C. LOSING TIME

LINE OF REGRESSION

34 43 25 21 25 28 27 35 40 31 40 38 39 41 42 44 45 47 48 50 52 53

Chart 5

The equation of the line of regression is $Y = 3.59X - 38.57$
 where Y = p.c. losing time,
 X = mean duration of employment in weeks
 $r = .503$; $\sigma_y = 22.71$; $\sigma_x = 3.18$

The equation of the line of regression is $Y = 1.54X + 5.82$
 where Y = p.c. losing time,
 X = mean duration of unemployment in weeks
 $r = .305$; $\sigma_y = 18.60$; $\sigma_x = 3.68$

LXXIV.—PERCENTAGES OF MALE WAGE-EARNERS LOSING TIME IN THE 118 OCCUPATIONS OF THE SAMPLE, BY WEEK INTERVALS OF DURATION OF UNEMPLOYMENT, SHOWING MEDIAN AND MEAN NUMBER OF WEEKS LOST BY THOSE LOSING TIME, CANADA, YEAR ENDED JUNE 1, 1931—Con.

Province	Occupation	P.C. of Male Wage-Earners Losing Time in																	Weeks Lost by Those Losing Time	
		Total	Week Intervals of Duration of Unemployment																	
			1-4	5-8	9-12	13-16	17-20	21-24	25-28	29-32	33-40	41-48	49-52	Median	Mean					
Que.	Cooks.....	45.1	3.6	4.6	5.7	4.9	4.5	4.1	5.5	3.5	4.1	1.6	2.9	20.3	22.1					
Ont.	Cooks.....	44.7	3.4	3.5	4.7	3.9	4.2	4.1	5.8	4.0	5.0	2.6	3.9	23.6	24.4					
B.C.	Section foremen, section men; trackmen.....	44.9	5.4	4.9	4.7	4.5	4.6	3.7	5.2	3.3	4.1	2.2	1.3	19.6	20.8					
Ont.	Boiler firemen.....	44.7	7.2	5.7	5.7	4.4	3.7	3.0	5.2	2.8	3.4	1.2	2.3	16.4	19.1					
Que.	Tenmsters, draymen, carriage drivers.....	44.3	4.8	4.7	5.3	4.3	4.5	3.7	5.8	2.7	3.9	1.8	2.7	19.7	21.4					
Ont.	Brickmen.....	44.5	5.1	5.8	5.3	3.9	3.8	3.6	5.6	3.1	4.1	1.6	2.7	19.2	21.0					
Que.	Boiler firemen.....	44.3	7.0	6.1	6.7	4.2	3.8	4.1	4.4	2.3	2.3	1.4	2.0	15.3	18.3					
Man.	Section foremen, section men; trackmen.....	44.2	3.1	2.8	3.0	3.2	4.0	6.5	6.0	5.0	5.5	3.0	1.7	24.5	24.8					
Man.	Truck drivers.....	43.6	6.7	3.9	3.0	3.2	3.8	3.9	5.0	3.1	4.8	2.4	3.0	22.0	23.4					
B.C.	Cooks.....	43.1	1.2	2.0	2.6	2.6	3.1	3.1	6.0	4.6	7.4	3.0	6.9	29.4	30.2					
Sask.	Section foremen, section men; trackmen.....	39.4	1.9	2.2	2.8	2.9	4.3	5.3	7.0	5.4	4.5	2.1	1.0	25.2	24.5					
Alta.	Section foremen, section men; trackmen.....	39.1	2.9	2.9	2.7	3.1	3.0	5.4	6.2	4.5	5.5	1.9	0.9	24.6	23.9					
Ont.	Linemen and cablemen.....	38.0	8.5	6.0	4.5	3.2	3.1	2.6	3.0	1.8	2.1	1.3	1.6	13.1	17.0					
N.B.	Farm labourers.....	37.5	2.7	3.2	4.9	4.3	5.6	3.6	5.0	3.3	3.4	1.2	0.5	19.7	20.8					
Que.	Stationary engineers.....	36.7	5.4	4.7	3.7	4.2	3.7	2.5	3.8	2.3	2.4	1.1	2.8	17.3	20.3					
Ont.	Foremen and overseers—Metal Products (Mfg.).....	36.6	5.7	4.9	4.4	3.7	3.2	2.4	5.6	2.2	2.5	1.0	1.2	16.6	18.5					
Ont.	Butchers and slaughtermen.....	35.9	5.3	4.6	4.5	2.7	1.9	2.2	4.3	2.0	3.4	1.8	3.2	18.8	21.5					
Ont.	Chauffeurs and bus drivers.....	35.5	4.3	3.2	3.4	2.7	2.6	2.2	4.5	2.7	4.5	2.0	3.3	23.7	23.9					
Que.	Chauffeurs and bus drivers.....	34.6	4.1	3.6	4.2	3.0	2.8	2.9	3.8	2.3	3.1	1.1	3.6	20.4	22.6					
B.C.	Bakers.....	34.8	5.1	4.2	3.7	3.0	2.9	1.7	4.1	2.0	3.0	1.6	3.7	19.1	22.0					
Ont.	Seamen, sailors, and deck hands.....	34.1	1.9	3.2	2.9	3.0	2.4	1.6	4.8	3.7	4.5	2.0	4.1	26.7	26.3					
Ont.	Domestic servants.....	34.1	3.2	3.9	3.1	2.9	3.2	3.7	3.4	3.3	3.9	2.4	2.1	22.1	23.5					
Ont.	Seamen, sailors, and deck hands.....	33.7	0.9	1.3	2.0	4.0	5.7	3.5	4.4	3.2	4.0	2.3	2.3	24.3	26.0					
Ont.	Waiters.....	33.3	3.3	2.8	3.6	3.7	2.9	2.3	4.0	2.6	3.3	1.6	3.2	21.6	23.5					
Que.	Deliverymen and drivers, n.s.....	33.0	5.1	2.8	3.8	3.0	2.9	2.5	3.7	1.8	2.8	2.7	2.0	19.6	21.8					
Que.	Waiters.....	33.0	3.9	4.1	4.0	3.3	2.9	2.4	3.8	2.3	2.9	1.3	2.2	18.7	21.1					
Que.	Bakers.....	32.2	4.2	3.5	3.5	3.4	2.5	2.5	2.9	1.9	2.7	1.5	3.5	19.3	22.3					
Que.	Butchers and slaughtermen.....	32.1	5.1	3.2	3.9	3.0	2.4	3.6	3.7	1.7	2.4	1.4	2.6	18.3	20.9					
N.S.	Fishermen.....	31.4	1.6	2.4	4.7	3.2	5.4	4.7	3.5	2.6	2.6	0.4	0.4	19.8	20.9					
Que.	Section foremen, section foremen; trackmen.....	31.3	6.2	4.1	3.1	2.8	2.9	3.0	3.0	2.1	2.6	0.8	0.6	16.1	17.9					
Ont.	Compositors; printers, n.s.....	29.8	6.0	4.8	3.1	2.5	1.7	1.3	2.0	1.2	2.0	1.4	2.7	13.7	19.0					
Ont.	Messengers.....	29.3	3.9	2.6	2.5	2.0	1.9	1.9	3.7	2.0	3.3	3.2	2.4	24.7	24.5					
Que.	Compositors; printers, n.s.....	29.4	6.0	4.0	3.4	2.7	1.8	1.7	2.5	1.5	2.3	0.9	2.8	15.1	19.7					
Que.	Shippers.....	29.5	6.2	4.1	4.3	2.6	2.3	1.8	2.5	1.4	1.3	1.0	2.0	13.2	17.8					
Ont.	Barbers, hairdressers, manicurists.....	29.0	3.4	3.3	2.8	2.3	1.9	1.7	2.8	2.3	3.2	1.9	3.4	22.9	24.1					
Ont.	Deliverymen and drivers, n.s.....	28.9	6.0	3.9	3.2	2.0	1.8	1.3	2.4	1.5	3.0	2.1	1.7	15.7	20.1					
Que.	Seamen, sailors, and deck hands.....	28.7	1.3	1.7	2.6	3.9	4.2	3.7	3.9	2.1	2.8	1.4	1.3	21.8	23.4					
Ont.	Watchmen and caretakers.....	27.7	3.7	2.7	2.8	2.8	2.1	2.2	3.8	1.8	2.7	1.4	1.7	20.5	21.8					
Que.	Watchmen and caretakers.....	27.4	3.9	2.5	2.8	2.5	2.8	2.1	3.2	2.1	2.5	1.6	1.5	19.6	21.6					
B.C.	Bookkeepers and cashiers.....	26.2	2.5	2.5	1.9	1.7	2.0	1.7	3.0	2.4	3.8	1.6	3.3	26.2	26.0					
Ont.	Messengers.....	26.0	3.7	2.4	2.3	2.1	1.4	1.3	3.1	1.6	3.0	2.0	3.0	24.2	24.6					
Alta.	Salesmen.....	26.0	2.7	2.2	3.0	2.1	2.1	2.3	3.1	1.9	2.8	1.3	2.5	22.6	23.8					
Ont.	Designers and draughtsmen.....	25.6	5.4	3.9	2.6	2.2	1.6	1.3	2.2	1.2	1.8	1.0	2.7	14.6	19.7					
Sask.	Salesmen.....	25.3	2.6	2.3	2.3	1.9	2.1	2.1	3.0	2.3	2.9	1.7	2.2	23.8	24.2					
Man.	Bookkeepers and cashiers.....	24.1	2.5	2.1	2.1	2.3	1.5	2.0	2.4	1.3	2.3	1.0	4.6	24.1	25.9					
Ont.	Telegraph operators.....	23.3	4.2	2.7	1.9	1.8	1.7	1.3	2.4	2.0	2.0	0.9	2.4	19.5	21.8					
Que.	Domestic servants.....	22.3	6.2	2.5	2.8	2.4	2.1	1.7	2.2	1.5	2.5	1.0	1.0	18.6	21.0					
Ont.	Locomotive engineers.....	22.1	3.6	2.3	1.6	1.6	1.7	1.4	2.0	1.0	1.6	0.9	1.4	15.0	20.5					
N.B.	Salesmen.....	18.8	3.6	2.2	1.9	1.5	1.6	2.0	1.3	1.3	1.4	1.0	1.2	17.7	19.8					
Ont.	Foremen and inspectors—steam railway.....	18.3	5.4	4.9	2.3	1.8	0.8	0.5	0.6	0.3	0.3	0.1	1.2	8.0	12.9					
Ont.	Civil engineers and surveyors.....	17.8	2.4	2.4	2.1	1.3	1.2	1.7	1.7	1.1	1.2	0.4	2.3	19.5	21.9					
Ont.	Janitors and sextons.....	17.0	3.0	2.1	2.0	1.3	1.3	1.4	1.9	1.1	1.4	0.7	1.3	18.1	20.5					
N.S.	Office clerks.....	17.5	3.2	2.2	1.8	1.4	1.4	1.6	1.9	1.3	1.2	0.4	1.1	17.4	19.4					
N.B.	Office clerks.....	17.3	4.3	1.7	2.1	1.1	1.3	1.3	1.5	1.2	1.2	0.7	1.0	15.2	18.3					
Alta.	Office clerks.....	16.5	1.9	1.6	1.5	1.4	1.5	1.1	1.8	1.3	1.7	0.8	1.8	22.1	23.7					
Ont.	Sales agents, canvassers, demonstrators.....	16.3	1.6	1.6	1.3	1.1	1.4	1.5	2.0	1.1	1.7	1.0	2.1	24.2	25.3					
Sask.	Office clerks.....	15.5	2.4	1.6	1.2	1.2	1.7	1.0	2.0	0.8	1.8	0.8	1.0	20.2	21.7					
Ont.	Commercial travellers.....	15.0	2.1	1.7	1.8	1.0	0.8	0.8	1.7	0.8	1.6	0.6	2.1	21.5	23.4					

LXXIV.—PERCENTAGES OF MALE WAGE-EARNERS LOSING TIME¹ IN THE 118 OCCUPATIONS OF THE SAMPLE, BY WEEK INTERVALS OF DURATION OF UNEMPLOYMENT, SHOWING MEDIAN AND MEAN NUMBER OF WEEKS LOST BY THOSE LOSING TIME, CANADA, YEAR ENDED JUNE 1, 1931—Con.

Province	Occupation	P.C. of Male Wage-Earners Losing Time in																Weeks Lost by Those Losing Time			
		Total	Week Intervals of Duration of Unemployment																		
			1-4	5-8	9-12	13-16	17-20	21-24	25-28	29-32	33-40	41-48	49-52	Median	Mean						
Sask....	Purchasing agents and buyers.....	13.9	2.6	2.8	1.6	0.9	1.3	0.8	0.6	1.0	1.0	0.4	1.0	12.9	18.2						
Que....	Janitors and sextons.....	13.8	2.0	1.7	1.5	1.0	1.3	1.0	1.0	0.9	1.0	0.9	0.9	19.2	21.3						
Ont....	Insurance agents.....	13.7	2.0	1.5	1.4	1.3	1.0	0.7	1.3	1.1	0.9	0.6	1.0	19.0	22.3						
Que....	Insurance agents.....	12.6	1.8	1.6	1.4	1.0	1.1	0.9	1.4	0.5	1.2	0.3	1.4	18.8	21.6						
Que....	Accountants and auditors.....	11.4	1.5	0.9	1.0	0.8	0.6	0.5	0.7	0.5	0.5	0.5	3.8	27.9	29.2						
P.E.I....	Farm labourers.....	11.3	1.5	1.3	1.9	1.6	1.5	1.2	1.0	0.5	0.3	0.3	0.3	15.9	17.3						
Sask....	Teachers—school.....	10.8	0.7	1.0	1.5	1.0	1.3	0.9	1.1	0.4	0.7	0.7	1.4	20.6	24.2						
Que....	Managers—retail stores.....	8.6	1.9	0.9	1.4	0.9	0.8	0.5	0.0	0.4	0.5	0.1	0.6	13.4	17.4						
Que....	Police and detectives.....	8.6	2.4	1.2	1.0	0.7	0.7	0.3	0.4	0.5	0.4	0.2	0.7	11.6	17.3						
Ont....	Managers—retail stores.....	7.3	1.6	1.2	0.8	0.5	0.5	0.4	0.5	0.3	0.4	0.2	0.8	12.9	19.2						
Ont....	Police and detectives.....	6.4	1.1	0.7	0.9	0.8	0.6	0.5	0.7	0.2	0.4	0.1	0.4	15.5	18.6						
Ont....	Postmen and mail carriers.....	6.3	2.4	1.0	0.6	0.2	0.2	0.4	0.6	0.2	0.3	0.1	0.3	8.0	14.1						
Ont....	Public service officials.....	5.7	1.0	0.6	0.6	0.6	0.3	0.6	0.8	0.2	0.5	0.1	0.3	16.9	19.3						
Que....	Public service officials.....	5.9	1.1	1.0	0.9	0.3	0.6	0.5	0.0	0.3	0.2	0.2	0.2	12.8	17.0						
Ont....	Managers—wholesale, import, and export houses; commercial agencies.....	5.0	1.1	0.5	0.6	0.5	0.4	0.2	0.4	0.3	0.5	2	0.5	15.4	19.5						
Que....	Teachers—school.....	4.2	0.6	0.8	0.3	0.4	0.1	0.3	0.3	0.1	0.3	0.1	0.9	16.9	24.0						
Ont....	Teachers—school.....	4.1	0.6	0.7	0.7	0.4	0.3	0.2	0.2	0.2	0.3	0.2	0.4	14.0	19.8						
Ont....	Officials—finance.....	3.0	0.9	0.4	0.4	0.1	2	0.1	2	2	0.1	0.1	0.6	9.5	19.3						
Ont....	Clergymen and priests.....	1.2	0.5	0.2	0.1	0.1	2	0.1	2	2	2	2	0.2	8.9	21.1						
Que....	Clergymen and priests.....	0.5	2	0.1	2	-	0.1	-	0.1	2	-	-	0.1	20.9	23.9						
Mean.....														20.14	22.22						
σ.....														4.72	3.05						

¹ Less than one-tenth of one per cent.

occupations. The size of the sample correlated shows that there is no ground for argument that the correlation ($r = .503$) is not sufficient to be conclusive. Furthermore it will now be shown that the correlation is lowered by something not inherent in occupation as such. We have mentioned that some occupations (from the viewpoint of the census) are confined to and comprise entire industries. These are the cases where the industry and the occupation are synonymous. Unemployment among "Clergymen and priests" is nearly identical with unemployment in "Religion," and unemployment among "Lumbermen" with "Forestry and logging." The question arises in a case of parallel industries and occupations—does the group take the features of unemployment typical of the occupation or of the industry? It would seem that the answer lies in an analysis of those occupations which conform least to the observed tendency for the percentage losing time to be a function of the duration. The logic of this move is apparent when we remember that when we analysed industrial unemployment we found a strong tendency to a condition directly opposed to that found in occupations. We found that the highly organized industries (on the whole those showing smallest unemployment) while showing only a small percentage losing time indicated that once the wage-earner lost time it was of long duration. Referring again to the second half of Chart 5 we find that on the whole the duration of unemployment is nearly the same for all percentages losing time. The correlation ($r = .305$)* would indicate that there is a slight tendency for industry to operate as do occupations. However, since some industries are identical or nearly so to some occupations—to that extent must they behave similarly. Therefore the correlation in industries is destroyed by the counter forces (1) the natural tendency (that of occupations) and (2) the induced tendency (the trend of organized industry to throw out workers who have outworn their usefulness).

* In comparing the correlation of occupations ($r = .503$) and of industries ($r = .305$) we find that r^2 (which is the true ratio of dependence) in the industries is .0930, while in occupations it is .2520 or nearly three times as great as that of industries.

To further illustrate this point let us consider those occupations which do not obey the natural tendency (few wage-earners losing time—little time lost). They are as follows:—

OCCUPATIONS SHOWING GREATER AND LESS DURATION THAN WARRANTED BY THE PERCENTAGE LOSING TIME

Greater	Less
Ont. — Officials—finance	Que. — Plumbers, steam fitters, and gas fitters
Ont. — Clergymen and priests	Ont. — Cabinet and furniture makers
Que. — Clergymen and priests	Que. — Machine operators—boots and shoes
Que. — Teachers—school	N.B. — Carpenters
Ont. — Teachers—school	Ont. — Sheet metal workers and tinmiths
Ont. — Managers—wholesale, import, and export houses; commercial agencies	Que. — Labourers—mines and quarries
Ont. — Public service officials	Ont. — Plumbers, steam fitters, and gas fitters
Ont. — Managers—retail stores	Ont. — Tool makers, die cutters and sinkers—Metal Products (Mfg.)
Sask. — Teachers—school	N.S. — Carpenters
Que. — Accountants and auditors	Ont. — Machine tenders, n.e.s.—Metal Products (Mfg.)
Que. — Insurance agents	Ont. — Fitter, assemblers, and erectors—Metal Products (Mfg.)
Ont. — Insurance agents	N.B. — Lumbermen
Que. — Janitor and sextons	B.C. — Miners (Other Mining)
Ont. — Commercial travellers	Ont. — Moulders, coremakers, and casters—Metal Products (Mfg.)
Sask. — Office clerks	Que. — Brick and stone masons
Ont. — Sales agents, canvassers, demonstrators	Que. — Longshoremen and stevedores
Alta. — Office clerks	N.S. — Labourers (Coal Mining)
Ont. — Civil engineers and surveyors	B.C. — Coal miners
Man. — Bookkeepers and cashiers	Alta. — Coal miners
Sask. — Salesmen	
Que. — Messengers	
B.C. — Bookkeepers and cashiers	
B.C. — Cooks	

n.e.s.—not elsewhere specified.

Note that those occupations which are in the lower percentage-losing-time intervals not only exhibit the unemployment characteristics of the highly organized industry—they are either identical with organized industries (e.g., occupation "Clergymen and priests," industry "Religion"; occupation "Teachers—school," industry "Education") or they are occupations which dominate organized industries or functionally are characteristic of them. This class includes the managers, officials and office workers which, as we have shown in the previous chapter are a sign of the relative degree of organization of the industry. There are only one or two exceptions to this class. This is to be expected in data of the type we are using and might be due to special local factors, etc.

Now observe the type of occupation which characterizes the other class—where the duration of unemployment is less than is warranted by the percentage of the wage-earners who lose time.

Note immediately that every member of the class shows a large percentage losing time and that they are mainly occupations engaged in mining, construction and logging, metal products manufacturing and water transportation. These are all loosely organized industries* with the exception of metal products manufacturing. The reason for their appearance in this class would seem to be due in part to the "paternal" attitude of the industry, i.e., the attempt to maintain a constant working force by spreading the employment. It has been pointed out in the previous chapter that there were scattered evidences of this practice in certain industries—but that on the whole it was exceptional and contrary to the trend.

There is however, another very significant factor which tends to spread unemployment within the occupation, viz., labour unions. The listed occupations in metal products manufacturing are, in comparison to other manufacturing groups, rather heavily unionized.† One of the aims of labour organizations is to spread employment among its members; in other words, by organizing the occupation to stem the trend of unemployment resultant from the "survival of the fittest" system of selection and discarding of workers employed by the "organizing" industries. Whether this aim is being accomplished in actual practice is a matter of opinion. In a closed shop, theoretically, the effect would be as intended but in an open shop would depend on the extent of unionization. The result is in general the same for a census occupation class—unless the total unionization is high any tendency to spread the unemployment will not be shown in the figures.

* The reader is again reminded that by an "organized" industry we mean one which is able to stabilize and control its working force.

† In 1931 according to "Labour Organization in Canada", 5.73 p.c. of the 310,544 members of labour organizations in Canada were engaged in the Metal Trades.

The Differential Behaviour of Occupational and Industrial Unemployment.—The indications are that the superimposition of the process of "organization" in industries on the natural trend of unemployment and the degree of overlapping between "occupation" and "industry" have lowered the real correlation in occupations between the percentage losing time and the duration of unemployment; also that in industries the natural trend and the trend of organization have tended to offset each other with the result that in industries the unemployed person suffers on the whole as much in one industry as in another. That is, the unemployed person in industry A more closely resembles the unemployed person in industry B, C or D than the *employed* person in his own industry A. But in occupation A, the unemployed person is more similar to the *employed* person in his own occupation than to a person unemployed in another occupation.

Natural Trend.—When we speak of the "natural trend" we mean that condition which appears the more fundamental. What type of unemployment was commonest at various periods of human history?

In primitive stages of human endeavour, occupations and industries were synonymous. One group of people tilled the fields, another group tended the herds, another made clothing and so forth. There was little division of labour, each group carried out the entire industrial process. At an early stage, the different occupation groups found it necessary to protect themselves by some sort of organization. That is, in place of the community being the social unit, the various occupation group subdivisions of the community became units in themselves. To insure the solidity of the group it was found necessary to protect those members who were physically or mentally inferior, so that by virtue of his occupational attachment the weaker individual was safeguarded from undue hardship. The physical welfare of the individual was determined by his occupational status. If a certain occupation was hard hit, the entire body felt the effects of poverty—if the occupation was thriving, everybody lived well. Translated into modern parlance this would mean that in a thriving occupation, only a few lost time and those who lost time lost only a little time, while in a hard hit occupation a great many lost time and those losing time lost a great amount of time. This condition was in evidence when the guild and craft organizations of Europe were at their height prior to the Industrial Revolution. The invention of the machine, division of labour, and mass production tended to break up this occupational alignment and it became necessary for the individual to look after himself in adapting himself to the new technique of production. Industries now commanded individuals not occupation groups and as they became more efficient discarded the unnecessary and obsolescent parts of their labour force. Rivalry became intense between industries, with the result that the most efficient industries commanded the highest type of labour while the less efficient would choose those required from the discards of the efficient and from the reserve of workers of lesser abilities. This is the picture represented in the second half of Chart 5, efficient or highly organized industries showing only a few losing time—but once losing time the worker loses a long time. That is, there are indications that he is discarded. Where does he go? We shall see. Looking at the loosely organized industries we find a great many losing time—but also that the individual losing time loses only as much as the person losing time in the highly organized industry—and the duration of time lost would be less if the class of worker normally attached to this type of industry were not increased by the discards from the more highly organized industries.

The potential effect of the process of organization in industries is lessened to some extent because certain occupations are still industries and also because of the increasing tendency towards organization of occupational labour unions within the industry.

In short, the renewal of the occupational labour union should be having some effect in restoring the normal trend of unemployment, although the trend of industrial efficiency is still proceeding at such a pace that the occupational influence is merely checking the rate of increase.

To illustrate we will take extreme cases. In a period of depression such as existed in 1931, all industries were discarding labourers but the majority of them found some work in seasonal industries, etc. That is, a large percentage of labourers lost time but as they found intermittent work the duration of unemployment was lessened. Now we will take an occupation of the opposite type "Accountants and auditors." Only a few are thrown off—but once thrown off, there are fewer avenues of re-employment. Therefore, unless the person changes his occupational status, he must remain idle indefinitely.

Occupation, Earnings and Duration of Unemployment.—We have stated that in industries those wage-earners losing time are a different class from those who lose no time. On investigation it was found that those losing time were predominantly occupation groups rather than aggregates of individuals drawn from numerous occupations. From this it was inferred that in occupations the wage-earners whether losing time or losing no time were generally a homogeneous group—the criterion of homogeneity being the occupational attachment. This inference checked with data derived from the census as has been shown in this chapter. We are therefore in a position to utilize census data on earnings by occupations. We will assume that all members of an occupation earn relatively similar wages. That is, when working the rate of earnings is somewhere near the same figure for all members of the occupation.*

Statement LXXV shows the average weekly earnings and the average earnings per week worked during the year preceding June 1. Note the great difference between the average earnings and the average earnings per week worked. If, for the moment, we assume that some wage-earners lost no time and regard the first column of average earnings per week worked as average earnings for those losing no time and the second column as the average earnings of those losing time, we find that those losing no time in most cases earn a living wage, while many of those losing time could not possibly maintain a decent standard of living from their wages. In other words the great mass of those losing time must depend on charity or state relief. This is emphasized when we consider that the average wage-earner has one or more dependents. Even admitting that heads of families have a better chance of losing no time than wage-earners with no dependents, we have figures to show that there were 250,000 male wage-earners in Canada earning less than \$450 in the year preceding June 1, 1931, who were heads of families. The average size of the family in this earning class was slightly over 4, meaning that the male wage-earner heads of families in this group earning less than \$450 per year has an average of 3 dependents in addition to himself.

Now there were 640,000 male wage-earners in Canada who earned less than \$450 during the year preceding June 1, 1931. Therefore, 390,000 wage-earners in this group were not heads of families, i.e., most of them had no dependents. The average number of dependents per male wage-earner earning less than \$450 a year would be about 1.2. Having regard for the fact that some members of the family assist the head in supporting the household, we will assume an arbitrary number of dependents per male wage-earner earning less than \$450 per annum of 1.

An annual wage of \$450 for a wage-earner with 1 dependent is obviously barely a subsistence, being less than \$9.00 weekly.

We again refer the reader to Statement LXXVI where we show the percentage of wage-earners in each of the 118 occupations of the sample who must depend upon assistance, i.e., those who on the basis of weeks worked and rate of wages in the occupation are receiving less than a living wage. This is done by determining from the occupation wage rate the number of weeks a wage-earner could lose without bringing his earnings for the whole year below \$450. This should be compared with the actual average weeks lost in the occupation.

It will be noted that the occupations which are in the worst conditions are those which are seasonal and cyclical in character and also predominantly from the Prairie Provinces and British Columbia. The occupations which show practically no destitute members are religion, education, Government service, managers and most occupations in railway transportation. These occupations combine a high rate of earnings with a minimum percentage of wage-earners losing time.

It is of interest to note that the actual rate of earnings, while highest in the occupations losing least time, is not correspondingly low in these occupations losing most time. (See Statement LXXVII which is a scatter diagram showing the relationship between the average weekly wage per week worked and the percentage of the occupation earning less than \$450 annually.) There are indications that certain cyclical and seasonal occupations which show intermittent employment get a measure of compensation from a somewhat higher rate of earnings than would be expected. This factor combined with the fact that many of the skilled trades, being highly unionized, have increased their rate of earnings but have not lowered the percentage losing time, militates against a high negative correlation between the rate of earnings and the percentage losing time.

* The idea being that those individuals in the occupation earning more are balanced by those earning less and that on the whole the range between high and low earnings is not great within the occupation group.

LXXV.—AVERAGE WEEKLY EARNINGS PER WEEK WORKED (WHICH IS BEING ASSUMED TO BE PER WAGE-EARNER LOSING NO TIME), AVERAGE WEEKLY EARNINGS (WHICH IS BEING ASSUMED TO BE PER WAGE-EARNER LOSING TIME), AVERAGE WEEKS LOST PER WAGE-EARNER AND MAXIMUM WEEKS THAT COULD BE LOST, AND STILL HAVE AN ANNUAL WAGE OF NOT LESS THAN \$450, WITH PERCENT. AGE OF MALE WAGE-EARNERS EARNING LESS THAN \$450, IN THE 118 SELECTED OCCUPATIONS OF THE SAMPLE, CANADA, YEAR ENDED JUNE 1, 1931

Province	Occupation	Average Weekly Earnings per Week Worked	Average Weekly Earnings	Maximum Weeks a Wage-Earner Could Lose to Insure a Yearly Income of Not Less than \$450	Actual Average Weeks Lost per Wage-Earner	Approximate Percentage of Wage-Earners Earning Less than \$450 Yearly
		\$	\$			
Ont.	Officials—finance.....	70-52	44-41	45	0-57	1
Ont.	Managers—wholesale, import, and export houses; commercial agencies.....	68-08	43-14	45	0-08	-
Ont.	Civil engineers and surveyors.....	54-17	31-33	43	3-90	3
Que.	Accountants and auditors.....	49-52	28-65	43	3-34	4
Ont.	Public service officials.....	47-88	30-13	42	1-10	-
Ont.	Locomotive engineers.....	47-45	33-81	42	3-38	2
Ont.	Managers—retail stores.....	46-54	29-32	42	1-41	1
Que.	Managers—retail stores.....	43-20	28-72	41	1-49	1
Que.	Public service officials.....	41-79	28-10	41	1-00	-
Ont.	Commercial travellers.....	41-45	22-77	41	3-51	1
Ont.	Teachers—school.....	39-51	24-48	40	0-81	3
Que.	Insurance agents.....	36-78	21-47	39	2-73	2
Ont.	Insurance agents.....	36-25	20-73	39	3-04	2
Ont.	Foremen and inspectors—steam railway.....	34-58	26-01	38	2-30	1
Ont.	Foremen and overseers—Metal Products (Mfg.).....	34-55	22-24	38	6-78	3
Ont.	Locomotive firemen.....	34-40	20-59	38	9-97	5
Ont.	Sale agents, canvassers, demonstrators.....	34-24	17-58	38	4-13	4
Ont.	Clergymen and priests.....	33-75	20-08	38	0-26	-
Ont.	Brakemen.....	33-01	19-68	38	9-35	1
Ont.	Police and detectives.....	32-63	21-00	37	1-19	5
Ont.	Designers and draughtsmen.....	32-11	19-93	37	5-05	5
Ont.	Compositors; printers, n.e.s.....	31-34	19-88	37	5-66	5
Ont.	Telegraph operators.....	31-25	18-16	37	5-08	4
Que.	Police and detectives.....	30-34	20-28	36	1-47	1
Que.	Compositors; printers, n.e.s.....	29-99	18-62	36	5-80	5
Ont.	Tool makers, die cutters and sinkers—Metal Products (Mfg.).....	29-05	16-40	35	14-29	10
Ont.	Brick and stone masons.....	28-48	12-68	35	22-64	23
B.C.	Stationary engineers.....	28-00	14-72	35	14-05	12
Que.	Brick and stone masons.....	27-82	14-16	35	20-00	15
Sask.	Purchasing agents and buyers.....	27-73	18-01	35	2-53	2
Ont.	Linemen and cablemen.....	27-33	18-41	35	6-45	4
Ont.	Plumbers, steam fitters, and gas fitters.....	27-26	15-49	35	13-58	11
B.C.	Bookkeepers and cashiers.....	26-75	13-37	34	6-81	8
Man.	Bookkeepers and cashiers.....	26-74	13-43	34	6-25	7
Sask.	Teachers—school.....	26-65	14-13	34	2-62	2
Que.	Stationary engineers.....	26-32	16-65	34	7-45	6
B.C.	Miners (Other Mining).....	24-69	12-39	32	19-89	25
Alta.	Office clerks.....	24-57	13-38	32	3-91	4
Alta.	Salemen.....	24-29	13-19	32	6-17	7
Ont.	Sheet metal workers and tinmiths.....	24-24	13-87	32	13-94	13
Alta.	Carpenters.....	24-24	11-31	32	26-64	24
Ont.	Cooks.....	24-10	15-14	32	10-90	11
Sask.	Office clerks.....	23-05	13-94	32	3-30	4
Man.	Carpenters.....	23-88	11-22	32	19-97	24
Que.	Plumbers, steam fitters, and gas fitters.....	23-87	14-40	32	11-54	10
Alta.	Coal miners.....	23-71	10-70	32	24-19	29
B.C.	Mechanics, n.e.s.—Metal Products (Mfg.).....	23-66	12-52	32	12-41	14
Alta.	Mechanics, n.e.s.—Metal Products (Mfg.).....	23-47	12-99	32	11-65	13
Que.	Clergymen and priests.....	23-46	23-05	32	0-12	-
N.B.	Office clerks.....	23-31	15-09	32	3-17	3
Ont.	Tailors.....	23-31	12-27	32	15-54	14
Que.	Tailors.....	23-30	13-09	32	13-49	12
Que.	Cooks.....	23-28	15-51	32	9-98	9
B.C.	Seamen, sailors, and deckhands.....	23-10	13-94	32	8-97	11
Que.	Teachers—school.....	22-91	12-32	31	1-02	1
Ont.	Watchmen and caretakers.....	22-79	14-09	31	6-06	6
Ont.	Blacksmiths, hammermen, and forgers.....	22-72	12-00	31	13-64	13
Ont.	Boiler firemen.....	22-58	14-27	31	8-55	8
Man.	Mechanics, n.e.s.—Metal Products (Mfg.).....	22-30	11-85	31	12-05	14
Sask.	Salemen.....	22-12	11-82	31	6-11	7
Que.	Blacksmiths, hammermen, and forgers.....	22-06	13-24	31	9-81	10

n.e.s.—not elsewhere specified.

n.s.—not specified.

¹ Includes allowance of \$5.00 per week for food and lodging.

² Includes allowance of \$3.00 per week for food.

³ Includes allowance of \$2.00 per week for lodging.

⁴ A large number did not report earnings. The earnings figure is therefore probably too high.

LXXX.—AVERAGE WEEKLY EARNINGS PER WEEK WORKED (WHICH IS BEING ASSUMED TO BE PER WAGE-EARNER LOSING NO TIME), AVERAGE WEEKLY EARNINGS (WHICH IS BEING ASSUMED TO BE PER WAGE-EARNER LOSING TIME), AVERAGE WEEKS LOST PER WAGE-EARNER AND MAXIMUM WEEKS THAT COULD BE LOST AND STILL HAVE AN ANNUAL WAGE OF NOT LESS THAN \$450, WITH PERCENT-AGE OF MALE WAGE-EARNERS EARNING LESS THAN \$450, IN THE 118 SELECTED OCCUPATIONS OF THE SAMPLE, CANADA, YEAR ENDING JUNE 1, 1931—Con.

Province	Occupation	Average Weekly Earnings per Week Worked	Average Weekly Earnings	Maximum Weeks a Wage-Earner Could Lose to Insure a Yearly Income of Not Less than \$450	Actual Average Weeks Lost per Wage-Earner	Approximate Percentage of Wage-Earners Earning Less than \$450 Yearly
		\$	\$			
B.C.	Coal miners.....	22-00	11-00	31	23-54	23
Ont.	Postmen and mail carriers.....	21-07	16-01	30	0-90	1
Ont.	Fitters, assemblers, and erectors—Metal Products (Mfg.).....	21-90	11-88	30	17-44	20
N.S.	Office clerks.....	21-93	13-77	30	3-39	3
B.C.	Cooks.....	21-78 ¹	17-58 ¹	30	13-02	20
Que.	Miners (Other Mining).....	21-65	10-99	30	16-42	23
Ont.	Bakers.....	21-49	12-40	30	7-87	9
Ont.	Moulders, coremakers, and casters—Metal Products (Mfg.).....	21-48	10-85	30	19-79	23
Ont.	Butchers and slaughterers.....	21-26 ¹	13-15 ¹	30	7-73	10 ⁴
B.C.	Truck drivers.....	21-21	12-38	30	10-15	12
Ont.	Seamen, sailors, and deckhands.....	20-95	12-27	28	8-73	10
Ont.	Janitors and sextons.....	20-65 ²	13-31 ²	28	3-60	5
Que.	Watchmen and caretakers.....	20-65 ²	12-89 ²	28	5-94	8
Que.	Shippers.....	20-62	13-55	28	5-26	6
Sask.	Mechanics, n.e.s.—Metal Products (Mfg.).....	20-58	10-50	28	12-32	19
Ont.	Cabinet and furniture makers.....	20-48	12-52	28	11-05	12
Que.	Machine tenders, n.e.s.—Metal Products (Mfg.).....	20-33	11-06	28	17-44	21
Que.	Boiler firemen.....	20-31	13-16	28	8-10	8
Ont.	Barbers, hairdressers, manicurists.....	20-22	15-64	28	7-02	11
Ont.	Chauffeurs and bus drivers.....	20-13	10-87	28	8-49	13
Que.	Section foremen, sectionmen; trackmen.....	19-98	13-11	27	5-60	7
Sask.	Carpenters.....	19-88	8-60	27	22-34	42
Que.	Waiters.....	19-89 ²	12-33 ²	27	6-98	10
N.B.	Salesmen.....	19-74	12-22	27	3-73	5
Ont.	Labourers—mines and quarries.....	19-65	10-61	27	14-16	20
Man.	Truck drivers.....	19-63	10-81	27	10-20	15
N.S.	Labourers (Coal Mining).....	19-51	9-39	27	23-52	31
B.C.	Section foremen, sectionmen; trackmen.....	19-39	11-65	27	9-33	12
Que.	Butchers and slaughterers.....	19-37	11-99	27	6-71	9
Que.	Chauffeurs and bus drivers.....	19-10	10-81	27	7-81	13
Que.	Longshoremen and stevedores.....	18-91	10-05	26	19-44	28
Que.	Janitors and sextons.....	18-73 ²	11-21 ²	26	2-95	5
Alta.	Section foremen, sectionmen; trackmen.....	18-70	10-09 ¹	26	9-36	16
Man.	Section foremen, sectionmen; trackmen.....	18-68	9-77	26	10-94	18
N.B.	Carpenters.....	18-66	11-12	26	13-72	17
Que.	Bakers.....	18-58	10-60	26	7-18	11
N.S.	Salesmen.....	18-53	11-23	26	3-93	6
Ont.	Waiters.....	18-52 ²	13-52 ²	26	7-81	13
Que.	Seamen, sailors, and deckhands.....	18-09 ¹	12-19 ¹	26	6-73	10 ⁴
N.S.	Carpenters.....	17-91	10-54	25	14-01	22
Sask.	Section foremen, sectionmen; trackmen.....	17-90	9-46	25	9-66	16
Ont.	Packers, wrappers, and labellers (Warehousing and Storage).....	17-73	11-24	25	9-56	16
Ont.	Deliverymen and drivers, n.s.....	17-54	10-77	25	5-80	10
Que.	Teamsters, draymen, carting drivers.....	17-15	10-09	25	9-47	16
Que.	Machine operators—boots and shoes.....	16-43	9-56	23	12-90	24
Ont.	Domestic servants.....	16-09 ¹	11-07 ¹	23	8-03	16
Que.	Deliverymen and drivers, n.s.....	16-08	9-34	23	7-20	14
B.C.	Fishermen.....	15-42	7-28	21	18-79	48
Que.	Labourers—mines and quarries.....	14-90	8-71	19	13-54	32
Que.	Weavers.....	14-71	9-54	19	8-70	18
Que.	Domestic servants.....	14-58 ¹	10-72 ¹	19	4-67	10
N.S.	Fishermen.....	14-13 ¹	10-47 ¹	19	6-56	16
N.B.	Lumbermen.....	14-05 ¹	9-35 ¹	19	18-47	42
N.B.	Farm labourers.....	12-47 ¹	9-48 ¹	13	7-82	26
P.E.I.	Farm labourers.....	11-60 ¹	9-41 ¹	9	1-96	8

While the relation between rate of earnings and percentage losing time is not as high as might be expected, the fact remains that by making allowance for the different individual durations of unemployment coupled with the average rate of earnings, we find that the percentage earning less than a living wage bears a distinct relationship to the percentage losing time.

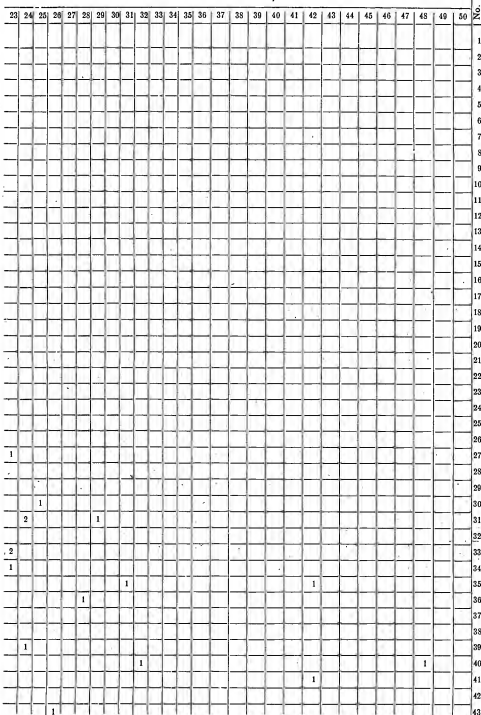
LXXVI.—SCATTER DIAGRAM SHOWING FREQUENCY DISTRIBUTION OF THE 118¹ OCCUPATIONS OF THE SAMPLE, ACCORDING TO AVERAGE WEEKLY EARNINGS PER WEEK WORKED IN RELATION TO PERCENTAGE OF OCCUPATION² EARNING LESS THAN \$450 IN THE YEAR ENDED JUNE 1, 1931³

Average Weekly Earnings per Week Worked		P.C. of Wage-Earners Earning Less than \$450 Yearly																						
		0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
No.																								
1	\$ 54-71 ⁴ ...	1	1		1																			
2																								
3																								
4																								
5	50.....					1																		
6																								
7		1																						
8			1	1																				
9																								
10	45.....																							
11																								
12			1																					
13		1																						
14					1																			
15	40.....		1																					
16																								
17																								
18				1																				
19				1																				
20	35.....		1		1																			
21		1				1	1																	
22			1				1																	
23							1																	
24						1	1																	
25	30.....		1				1																	
26												1												
27				1										1			1							
28				1		1			1	1			1											
29							1																	
30	25.....					1																		
31						1			1			1	1		1	1								
32		1	1		1			1		1	1		1	1	2	1								
33			1		1				1			1				1						2		
34						1	1		1	1	2			1							1			
35	20.....					1		1	1		1	1	1	1		1						1	1	
36						1	1			1		1	1	2			1	1	1					
37											2						2						1	
38																	1							
39																1	1							
40	15.....										1								1					
41																	1							
42																								
43	12.....									1														

¹ Male wage-earners.² Messengers, Ontario and Quebec, are omitted, being mostly juveniles.³ Includes one occupation having average weekly earnings of \$54, one of \$69 and one of \$71.

LXXVI.—SCATTER DIAGRAM SHOWING FREQUENCY DISTRIBUTION OF THE 118³ OCCUPATIONS OF THE SAMPLE, ACCORDING TO AVERAGE WEEKLY EARNINGS PER WEEK WORKED IN RELATION TO PERCENTAGE OF OCCUPATION³ EARNING LESS THAN \$450 IN THE YEAR ENDED JUNE 1, 1931

P.C. of Wage-Earners Earning Less than \$450 Yearly



By means of the multiple correlation we have been able to observe the relation of the factors which account for the percentage of wage-earners earning less than \$450 per annum. We will denote the various factors by symbols as follows:—

X_1 = percentage of wage-earners earning less than \$450 per annum;

X_2 = percentage of wage-earners losing time;

X_3 = average earnings per week worked;

S = other factors.

In accounting for X_1 , it was found that the combined weight of X_2 and X_3 accounted for 71.25 p.c. ($R = .84$), the remaining factors (S) accounting for 28.75 p.c. It would appear that the main content of S must be the duration of unemployment independent of X_2 .

We may say therefore, that the percentage earning less than \$450 per annum is determined mainly by the percentage in the occupation who lose time, secondly by the duration of unemployment independent of the percentage losing time, and thirdly by the rate of earnings, the weights derived from the multiple correlation being $X_2 = 60.6$ p.c., $X_3 = 10.6$ p.c., $S = 28.8$ p.c.

These weights are, of course, not applicable to fine measurements but merely serve as indications of the relative importance of certain factors in determining the probability of a person being forced to live under sub-marginal conditions. Broadly stated, this means that if a person, deciding upon an occupational attachment, wishes to avoid poverty and loss of economic independence, he or she should consider first, the chance of losing time, second, the duration of unemployment once a job has been lost and third, the rate of earnings in the occupation. This illustration does not take into account natural ability or individual preference for certain occupations.

The most striking fact is that the rate of earnings is relatively a minor consideration. This of course means that the average earnings tend to approach an amount which would guarantee a living wage, provided the individual were working more continuously. This may seem a very commonplace observation, but on closer examination we find that the problem of workers earning less than a living wage is confined mainly to certain occupations where a great many wage-earners lose time. Note that there are 22 of the occupations in the sample showing less than 3 p.c. earning less than a living wage, while 80 p.c. of those earning less than \$450 per annum are contained in 53 occupations or 46 p.c. of the occupations. This appears to be a strong indication of the tendency noted in this and the previous chapter, *viz.*, that when an industry discards workers, the tendency is to discard occupations rather than individuals at random.

Summary.—This chapter does not aim at a complete picture of occupational unemployment. Its purpose is rather to isolate and define the difference between unemployment resulting from the industrial structure, and that resulting from the occupational regimentation of labour.

It has been shown that what differences exist are very real but that their full effect is difficult to show statistically due to the overlapping of industries and occupations.

The essential point of difference appears to be that in industries, the employed, as a class, are different from the unemployed. In occupations this is not the case. From this it seems to follow that the unemployed in industry tend to be certain occupations rather than individuals. It also follows that occupations showing long duration of unemployment tend to be assimilated into the large class—"unspecified industrial connection".*

*In a study of occupations it becomes very apparent that the class "unskilled labour" is a purely relative group, *i.e.*, relative to the condition of the industrial structure at a particular time. In other words, it tends to be a labour reserve—almost a weather gauge of the social side of industry.

CHAPTER V

THE AGE FACTOR IN UNEMPLOYMENT

The Population Background.—Statement LXXVII gives by age group, the number of males and females in Canada, on June 1, 1931 in the categories of population, gainfully occupied, wage-earners, and unemployed. The ratios of successive columns have been calculated in the table.

A simple calculation shows that the gainfully occupied, the wage-earners and the unemployed all reach their numerical peak in the age group 20-24. Likewise we can see that the largest percentage of the population gainfully occupied is in the group 35-44, the largest percentage of the gainfully occupied, who are wage-earners occurs in the group 20-24. The percentage unemployed has two peaks, one at 18-19 and one at 65-69.

It was felt, however, that a graduation of the figures of these four categories would better bring out their relationships and characteristics. The method of graduation used is described briefly in Appendix 6.

LXXVII.—POPULATION 10 YEARS OF AGE AND OVER, GAINFULLY OCCUPIED, WAGE-EARNERS AND UNEMPLOYED, AND PERCENTAGES EACH FORMS OF THE PRECEDING, BY AGE GROUP AND SEX, CANADA, JUNE 1, 1931

Age Group	Population	Gainfully Occupied	Wage-Earners	Un-employed	Gainfully Occupied as P.C. of Population	Wage-Earners as P.C. of Gainfully Occupied	Un-employed as P.C. of Wage-Earners
MALES							
TOTAL.....	4,249,895	3,261,371	2,022,260	422,076	76.74	62.01	20.87
10-13.....	437,179	4,840	678	59	1.11	14.01	8.70
14-15.....	208,219	39,155	11,900	1,767	18.80	30.39	14.83
16-17.....	216,085	118,546	62,697	12,744	55.12	52.89	20.33
18-19.....	206,316	166,728	107,926	24,970	80.33	65.12	23.14
20-24.....	463,120	429,018	308,351	69,755	92.64	71.87	22.82
25-34.....	766,988	789,361	539,145	111,741	97.73	71.00	20.73
35-44.....	795,833	990,452	437,893	80,596	97.82	63.42	18.41
45-54.....	587,919	567,977	327,464	65,744	96.61	57.65	20.08
55-64.....	335,289	322,507	163,371	37,885	96.77	50.72	23.16
65-69.....	120,473	90,934	39,461	10,754	75.48	43.40	27.25
70 and over.....	173,474	72,853	23,174	6,061	42.00	31.81	26.15
FEMALES							
TOTAL.....	3,905,496	665,859	547,837	47,882	17.05	82.28	8.74
10-13.....	427,874	557	430	25	0.13	77.20	5.81
14-15.....	204,281	8,078	7,201	642	3.95	89.14	8.92
16-17.....	210,744	43,667	41,130	4,057	20.72	94.19	11.32
18-19.....	201,312	81,319	76,684	8,093	40.40	94.30	10.55
20-24.....	447,001	189,336	174,474	14,757	42.36	92.15	8.46
25-34.....	716,131	155,001	132,603	10,097	21.73	85.22	7.61
35-44.....	627,031	81,410	59,352	4,076	12.98	72.91	7.88
45-54.....	484,544	55,894	33,667	2,939	11.54	60.59	8.68
55-64.....	308,266	32,638	18,070	1,484	10.69	49.24	9.24
65-69.....	110,380	9,506	3,816	360	8.61	40.14	9.87
70 and over.....	170,932	7,853	2,210	143	4.59	28.14	6.47

LXXXVIII.—POPULATION 10 YEARS OF AGE AND OVER, GAINFULLY OCCUPIED, WAGE-EARNERS AND UNEMPLOYED, AND PERCENTAGES EACH FORMS OF THE PRECEDING, GRADUATED IN SINGLE YEARS, BY SEX, CANADA, JUNE 1, 1931

GRADUATED IN FOUR CATEGORIES

Age	Population	Gainfully Occupied	Wage-Earners	Un-employed	Gainfully Occupied as P.C. of Population	Wage-Earners as P.C. of Gainfully Occupied	Un-employed as P.C. of Wage-Earners
MALES							
10.....	111,275	-	-	-	-	-	-
11.....	109,619	570	-	-	0.52	-	-
12.....	108,543	1,840	150	-	1.32	10.48	-
13.....	107,960	2,840	630	50	2.32	22.18	9.37
14.....	107,334	11,743	3,130	410	10.94	26.63	13.10
15.....	107,032	27,412	8,770	1,360	25.61	31.99	15.51
16.....	106,450	49,826	23,119	4,048	46.81	46.40	17.51
17.....	105,273	68,720	39,578	8,696	65.28	57.59	21.07
18.....	103,310	79,572	50,616	11,661	77.02	63.61	23.04
19.....	100,790	86,157	57,310	13,256	85.48	66.53	23.13
20.....	97,999	86,850	60,740	14,049	88.63	69.94	23.13
21.....	95,135	86,727	61,794	14,179	91.18	71.24	22.95
22.....	92,448	86,146	62,318	14,146	93.18	72.34	22.70
23.....	89,680	85,351	62,268	13,976	95.16	72.99	22.44
24.....	87,059	83,747	61,288	13,616	96.20	73.18	22.22
25.....	84,608	81,686	59,644	13,094	96.55	73.02	21.95
26.....	82,388	79,622	57,852	12,537	96.65	72.66	21.67
27.....	80,443	78,009	56,429	12,071	96.97	72.34	21.39
28.....	78,818	76,877	55,385	11,699	97.54	72.04	21.12
29.....	77,474	75,924	54,377	11,336	98.00	71.62	20.85
30.....	76,359	75,104	53,388	10,979	98.36	71.09	20.57
31.....	75,416	74,371	52,398	10,624	98.61	70.46	20.27
32.....	74,599	73,680	51,392	10,266	98.78	69.73	19.98
33.....	73,990	73,083	50,368	9,892	98.77	68.91	19.64
34.....	73,640	72,612	49,320	9,504	98.60	67.92	19.27
35.....	73,398	72,186	48,276	9,123	98.35	66.88	18.90
36.....	73,120	71,725	47,241	8,772	98.09	65.80	18.57
37.....	72,661	71,147	46,224	8,473	97.92	64.97	18.23
38.....	71,989	70,433	45,228	8,234	97.84	64.21	18.21
39.....	71,192	69,637	44,244	8,039	97.82	63.53	18.17
40.....	70,330	68,789	43,272	7,878	97.81	62.91	18.21
41.....	69,449	67,917	42,314	7,739	97.79	62.30	18.29
42.....	68,600	67,051	41,371	7,613	97.74	61.70	18.40
43.....	67,893	66,295	40,508	7,522	97.65	61.10	18.57
44.....	67,295	65,631	39,723	7,472	97.53	60.52	18.81
45.....	66,699	64,901	38,921	7,430	97.39	59.97	19.09
46.....	66,158	64,346	38,094	7,362	97.24	59.43	19.37
47.....	64,484	62,605	36,877	7,236	97.09	58.90	19.62
48.....	62,725	60,804	35,489	7,038	96.94	58.37	19.83
49.....	60,580	58,639	33,904	6,792	96.78	57.82	20.03
50.....	58,224	56,238	32,199	6,515	96.59	57.25	20.23
51.....	55,759	53,728	30,447	6,225	96.36	56.67	20.44
52.....	53,330	51,233	28,725	5,939	96.07	56.07	20.68
53.....	50,890	48,710	27,006	5,654	95.72	55.44	20.94
54.....	48,349	46,076	25,241	5,359	95.30	54.79	21.22
55.....	45,778	43,385	23,468	5,054	94.79	54.08	21.54
56.....	43,249	40,735	21,729	4,754	94.19	53.34	21.88
57.....	40,832	38,161	20,059	4,463	93.46	52.66	22.25
58.....	38,461	35,690	18,430	4,175	92.59	51.73	22.66
59.....	36,148	33,007	16,823	3,888	91.64	50.83	23.11
60.....	33,902	30,629	15,274	3,608	90.39	49.87	23.02
61.....	31,819	28,289	13,822	3,341	88.91	48.82	24.17
62.....	29,970	26,144	12,507	3,094	87.23	47.84	24.74
63.....	28,671	24,429	11,480	2,904	85.20	46.99	25.30
64.....	27,400	22,746	10,487	2,711	83.01	45.10	25.85
65.....	26,158	21,099	9,529	2,516	80.65	45.17	26.40
66.....	24,943	19,479	8,605	2,319	79.09	44.18	26.95
67.....	23,753	17,893	7,717	2,119	75.35	43.13	27.46
68.....	22,589	16,359	6,853	1,917	72.33	42.00	27.92
69.....	21,451	14,818	6,043	1,713	69.08	40.78	28.35
70.....	20,338	13,329	5,258	1,507	65.54	39.43	28.60
71.....	19,091	11,872	4,507	1,299	62.19	37.95	28.82
72.....	17,743	10,447	3,791	1,088	58.88	36.29	28.70
73.....	16,229	9,055	3,109	875	55.80	34.33	28.14
74.....	14,587	7,695	2,462	660	52.75	31.99	27.61
75.....	12,918	6,367	1,850	443	49.29	29.06	27.00
76.....	11,321	5,071	1,272	222	44.79	25.08	17.45
77.....	9,895	3,808	728	-	38.48	19.12	-
78.....	8,649	2,577	219	-	29.80	8.50	-
79.....	7,519	1,378	-	-	18.33	-	-
80 and over.....	34,893	211	-	-	3.25	-	-

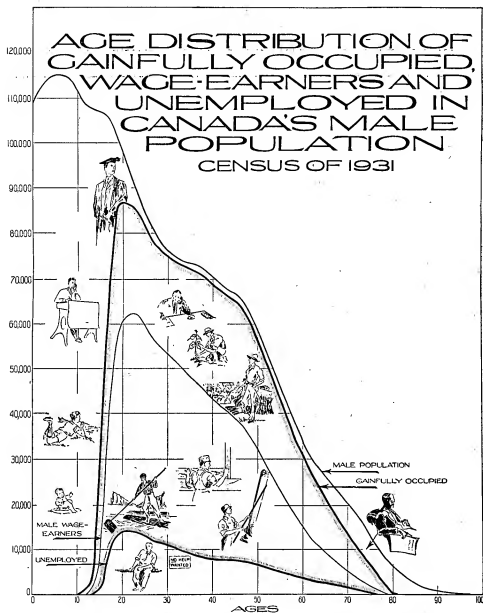


Chart 6

LXXVIII.—POPULATION 10 YEARS OF AGE AND OVER, GAINFULLY OCCUPIED, WAGE-EARNERS AND UNEMPLOYED, AND PERCENTAGES EACH FORMS OF THE PRECEDING, GRADUATED IN SINGLE YEARS, BY SEX, CANADA, JUNE 1, 1931—Con.

GRADUATED IN FOUR CATEGORIES

Age	Population	Gainfully Occupied	Wage-Earners	Un-employed	Gainfully Occupied as P.C. of Population	Wage-Earners as P.C. of Gainfully Occupied	Un-employed as P.C. of Wage-Earners
FEMALES							
10.....	108,861	-	-	-	-	-	-
11.....	107,231	45	-	-	-	-	-
12.....	105,993	100	47	-	-	47-00	-
13.....	105,375	412	283	10	-	68-69	3-53
14.....	105,127	1,973	1,728	105	1-88	87-58	6-08
15.....	104,904	6,105	5,573	532	6-82	91-22	9-55
16.....	104,360	15,259	14,222	1,035	14-62	93-22	11-50
17.....	103,152	28,411	26,908	3,022	27-54	94-71	11-23
18.....	101,118	37,675	35,543	3,957	37-29	94-34	11-08
19.....	98,438	43,694	41,141	4,340	44-39	94-10	10-55
20.....	95,504	42,223	39,534	3,558	44-21	93-63	9-00
21.....	92,405	40,432	37,549	3,245	43-70	92-87	8-84
22.....	89,237	38,050	35,054	2,937	42-65	92-11	8-38
23.....	85,109	35,361	33,361	2,606	42-23	91-75	7-81
24.....	83,006	32,008	29,124	2,250	38-59	91-00	7-76
25.....	80,041	27,154	24,449	1,890	33-93	90-04	7-73
26.....	77,324	22,970	20,445	1,674	29-71	89-01	7-70
27.....	74,967	19,648	17,229	1,321	26-17	87-78	7-67
28.....	73,004	17,142	14,816	1,123	23-48	86-43	7-65
29.....	71,361	15,100	12,828	961	21-16	84-95	7-49
30.....	69,988	13,423	11,193	822	19-18	83-37	7-34
31.....	68,831	12,048	9,846	710	17-50	81-72	7-21
32.....	67,841	10,904	8,725	620	16-07	80-02	7-11
33.....	67,159	10,108	7,941	563	15-03	78-58	7-00
34.....	66,820	9,700	7,535	544	14-52	77-68	7-22
35.....	66,610	9,613	7,349	544	14-28	77-18	7-41
36.....	66,319	9,373	7,194	647	14-13	76-75	7-40
37.....	65,731	9,110	6,923	637	13-86	75-99	7-76
38.....	64,798	8,700	6,509	510	13-43	74-80	7-84
39.....	63,659	8,257	6,050	479	12-97	73-38	7-91
40.....	62,393	7,810	5,611	446	12-53	71-79	7-95
41.....	61,078	7,411	5,197	415	12-13	70-13	7-99
42.....	59,782	7,076	4,851	391	11-84	68-56	8-06
43.....	58,546	6,836	4,594	374	11-63	67-20	8-14
44.....	57,317	6,657	4,404	363	11-63	66-06	8-24
45.....	56,046	6,535	4,249	355	11-60	65-02	8-35
46.....	54,679	6,338	4,099	345	11-70	64-07	8-44
47.....	53,171	6,219	3,921	333	11-70	63-05	8-54
48.....	51,476	5,991	3,711	320	11-64	61-94	8-62
49.....	49,629	5,739	3,489	303	11-56	60-79	8-68
50.....	47,694	5,474	3,264	286	11-48	59-63	8-76
51.....	45,733	5,209	3,044	265	11-39	58-44	8-80
52.....	43,811	4,955	2,807	258	11-31	57-26	8-88
53.....	41,902	4,712	2,643	236	11-25	56-09	8-93
54.....	39,951	4,471	2,457	221	11-19	54-95	8-99
55.....	38,032	4,234	2,279	206	11-13	53-83	9-04
56.....	36,152	4,002	2,108	192	11-07	52-67	9-11
57.....	34,363	3,777	1,946	178	10-99	51-52	9-15
58.....	32,638	3,557	1,792	165	10-90	50-38	9-21
59.....	30,951	3,342	1,645	158	10-80	49-22	9-24
60.....	29,346	3,134	1,507	140	10-68	48-09	9-29
61.....	27,849	2,932	1,376	128	10-53	46-93	9-30
62.....	26,503	2,739	1,253	117	10-33	45-75	9-34
63.....	25,617	2,564	1,146	108	10-01	44-70	9-42
64.....	24,713	2,392	1,043	100	9-68	43-60	9-59
65.....	23,791	2,222	943	91	9-34	42-44	9-65
66.....	22,854	2,056	848	82	9-00	41-25	9-67
67.....	21,897	1,894	757	73	8-65	39-97	9-64
68.....	20,928	1,736	670	62	8-28	38-66	9-65
69.....	19,931	1,577	587	59	7-91	37-22	9-54
70.....	18,922	1,423	507	47	7-62	35-63	9-27
71.....	17,897	1,273	432	38	7-11	33-94	9-80
72.....	16,854	1,125	361	29	6-67	32-06	8-03
73.....	15,793	981	294	20	6-21	29-67	8-80
74.....	14,719	840	231	11	5-71	27-50	4-76
75.....	13,628	702	172	2	5-15	24-50	1-16
76.....	12,512	667	116	-	4-59	20-46	-
77.....	11,389	435	85	-	3-82	14-94	-
78.....	10,244	306	18	-	2-99	5-88	-
79.....	9,083	180	-	-	1-98	-	-
80 and over.....	29,641	58	-	-	0-73	-	-

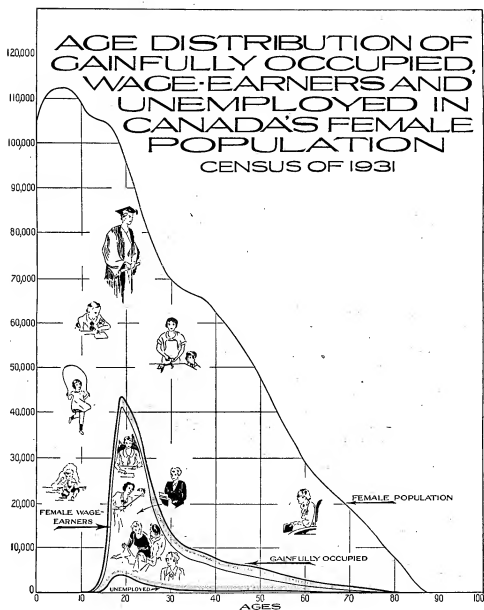


Chart 7

The chart here given (Chart 6) is a frequency distribution by age, and hence its several areas represent the numbers of persons in the several categories. The total area under the top line is the male population of Canada (as of June 1, 1931); under the second line the gainfully occupied; under the third, the wage-earners, and under the fourth the unemployed. Between the top two lines are all the males of Canada not ordinarily engaged in productive enterprise—at the left-hand side because they are too young and on the right because they are too old; the strip through the middle ages includes cases of permanent sickness and of men living on income or in institutions. The area between wage-earners and unemployed represents wage-earners who were actually at work; that between gainfully occupied and wage-earners represents employers, workers on own account, and workers receiving no money payment—factory owners, small shop-keepers, and farmers' sons working for their fathers being typical of the three classes. It is interesting to observe the similarity in profile between the three curves, a reflection of the fact that a regular percentage in each class tends to be included within the next lower class. Similar interpretations may be made concerning the curve for females (see Chart 7).

The Fundamental Curve.—The fundamental curve in a study of unemployment by age is that of the percentage unemployed in each year, or group of years, of life. Whether this curve be drawn for all Canadian males or for males in a specific occupation, industry, or province, the result is in practically all cases similar—a bi-modal or double-humped line. There is a peak in the percentage unemployed about the age of 20, a trough extending from about age 25 to age 50, the bottom of which is about age 40, and a rise towards old age which reaches a crest at about age 65. These facts appear prominently in the subsequent figures and charts for the various divisions of males in Canada.

The age of minimum unemployment comes very close to (somewhat preceding) the age of maximum earnings. Conversely at the ages at which unemployment is high—under 25 and over 55—earnings are low. Average earnings and percentage employment, the two measures of economic fitness, agree for males in the relative productiveness they assign to the different periods of life, except at very young and very old ages. For females the second peak of unemployment is far less distinct than for males, and the relation between unemployment and earnings is not as obvious.

These critical points (the minimum and the two maxima) on the curve of male unemployment by age vary greatly for different groups (occupational or industrial), partly as a result of the age distribution of the population—the background from which the wage-earners are recruited—and partly as a result of the requirements of the particular industry or occupation, i.e., for reasons demographic and economic.

Young Persons.—The low unemployment at the very young ages rising to a peak about age 20 is artificial, a result in part at least of the 1931 Census definition of unemployment. Since no person was considered unemployed who had not previously worked, a boy or girl did not become exposed to risk until after getting his or her first job. The effects of the definition on the figures become plain if we consider a simplified case. If all persons in Canada left school at exact age 15, say, and began looking for work, the rate of unemployment at exact age 15 would be *nil*, as shown in a census taken on the 1931 basis, because only those young people who had *found* jobs would be recorded as wage-earners and therefore exposed to risk of unemployment. As people found jobs and lost them the percentage unemployed would increase steadily from zero at age 15, even though the difference between labour supply and demand (which is the true measure of unemployment) steadily decreased from age 15.

All young persons do not come into the labour market at exact age 15, but the argument is the same for the actual case where entrants are of various ages. Thus the peak at the younger ages is caused by the fact that the unemployment curve consists of two components, due to the rising number of entrants and the falling percentage of "true" unemployment.* At older ages the dip is due largely to a selection whereby the less economically fit persons will consider themselves "retired" instead of "unemployed" for ordinary as well as for census purposes.

The bi-modal curve of unemployment by age, to which attention has been drawn, does not apply to rural industry as it does to urban, for rural groups when taken by age seem to omit the mode about age 20 which is so characteristic of urban groups. An example of this among

* "True" unemployment includes those who are looking for work but who are not listed as "unemployed" in the census because they have not as yet had jobs, as well as those who have lost jobs.

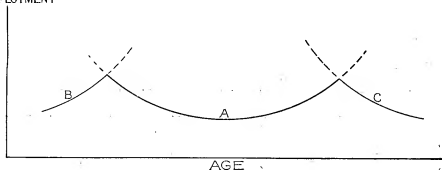
industries is agriculture; among occupations, farming; among provinces, Prince Edward Island. They show an almost steady rise from the youngest age to about age 65, with usually a fall after that point. The explanation may lie in the farmer's son becoming of "no pay" status instead of remaining unemployed.

Thus because of differences in the job-finding capacities of men at different ages, the curve of percentage unemployed by age shows certain very definite characteristics whether taken for a given industry, occupation, area or moment of time. It seems that if we select a group of people either at random or by some criterion not directly related to unemployment, the ratio of unemployed to employed at each age will have, in general, this well-defined trend.

This bi-modal curve is to be seen in Canada for females as well as for males, though the female wage-earners reach their corresponding minima and maxima at earlier ages than the males in all cases, and also for most provinces, industries and occupations, for the Censuses of 1911, 1921 and 1931.

Hence we may regard the fundamental curve as composed of three elements—a main part (the U-shaped curve which is the inverse of the course of productive efficiency throughout life), a rising element at the beginning of life and a falling element at the end. The main part measures real unemployment—the two other elements result largely from the method of measurement.

PER CENT
UNEMPLOYMENT



The main branch (A in the diagram) runs almost inversely to the earnings trend. B and C are in a sense artificial, but they are not confined to the Canadian Census. The English unemployment insurance definition gives the same result, and so likewise does the United States Census. Figures from these sources taken at a time very close to the Canadian Census of 1931, bring out this point, as also do a specimen (Brooklyn, New York City) from the Special Census of Unemployment of January, 1931 and figures quoted from a book by Miss Margaret Hogg, *The Incidence of Work Shortage* (Statement LXXIX).

Just as a person was not counted as unemployed for Canadian Census purposes until he had found and lost his first job, so he was not counted for the British and United States figures here given. Apparently in all investigations it has been felt that any other definition would be too hard to apply in individual cases.

What are the characteristics of industry and of wage-earning individuals which these varying probabilities of unemployment represent? The two elements, nature of the industry and nature of the worker (for industry and the worker are the two constituents of the labour market, whose preferences and capacities result in the contract of employment) together determine—and completely determine—the percentage figures of unemployment in any group (age, area, etc.).

To begin with the most obvious and universal attribute of the series of curves shown—the dip in percentage unemployed at middle ages—we must consider productive capacity throughout life. In the long run a man will be employed according as there is an employer who can turn his work to profit. Also, on the principles of equilibrium economics, a man's wages will in the long run have a fairly definite relation to his actual producing capacity (i.e., the value of goods he is

able to create which will be related in turn to the profits he can make for his employer). If one group (selected in any manner whatever) has a higher productive capacity than another group, it stands to reason that the marginal worker in the group (as a whole, employed and unemployed) with the higher productive capacity will be nearer to the bottom of the group (arranged in order of skill) than the marginal worker in the second group.

LXXIX.—COMPARISON OF PERCENTAGE UNEMPLOYMENT IN THE UNITED STATES AND BRITISH INVESTIGATIONS, BY AGE GROUP AND SEX

Age Group	Sample of British Insured Wage- Earners ¹	United States April 1930 ² Class A ³	Brooklyn Borough, New York City, January 1931 ⁴ Class A ³	Miss Hogg's Sample from Connecticut ⁵
MALES				
10-14.....	11.8	0.6	4.4	-
15-19.....		7.0	28.1	23
20-24.....	23.5	6.9	24.6	23
25-29.....	22.7	5.2	16.3	18
30-34.....	21.9	4.6	15.2	11½
35-39.....	21.4	4.6	17.1	11
40-44.....	22.4	4.9	18.9	14½
45-49.....	23.1	5.3	19.9	16½
50-54.....	26.5	5.4	21.3	
55-59.....	26.9	5.7	20.2	19½
60-64.....	32.0	5.8	21.4	
65-69.....	-	5.8	18.0	
70 and over.....	-	4.3	15.8	
FEMALES				
10-14.....	5.9	4.6	7.2	-
15-19.....			23.2	13½
20-24.....	9.1	3.5	15.4	12½
25-29.....	9.3	3.3	12.0	8½
30-34.....	11.8	3.2	11.2	9
35-39.....	10.9	3.2	11.4	10
40-44.....	9.4	3.1	12.4	
45-49.....	17.3	3.1	11.9	9½
50-54.....	18.3	3.1	10.8	
55-59.....	20.6	3.1	8.5	
60-64.....	16.4	2.9	8.9	
65-69.....	-	2.4	7.0	
70 and over.....	-		7.9	

¹ Ministry of Labour Gazette, September 1933, p. 314.

² Fifteenth Census of the United States, Unemployment, Vol. II, p. 248 (males) and p. 280 (females).

³ Class A unemployment includes persons out of a job, able to work, and looking for a job.

⁴ Special Census of Unemployment, Fifteenth Census of the United States, Unemployment, Vol. II, p. 384.

⁵ Study of Miss Margaret Hogg, under auspices of Russell Sage Foundation, on a sample consisting of part of the population of Connecticut. Figures are the percentage idle from lack of work on day of visit (May-June, 1931), of the earners normally members of the full-time unemployment markets, p. 63.

This can be tested for age groups if we take wages earned per week of employment as the measure of skill and "weeks lost" (as reported in the census Volume VI) as the measure of unemployment. The two figures are shown by age groups below (Statement LXXX) and it is easily seen that as far as middle life is concerned, for men there is a peak in earnings to correspond to the trough in the unemployment curve. The fact that earnings are low at early ages suggests that the low unemployment under age 17 is a reflection of the census method, from ages 17 to 69 the two curves seem mirror-images of one another.

LXXX.—AVERAGE NUMBER OF WEEKS WORKED AND AVERAGE EARNINGS PER WEEK WORKED BY MALE WAGE-EARNERS, BY AGE GROUP, CANADA, YEAR ENDED JUNE, 1931

Age Group	Average Weeks Employed	Average Earnings per Week Worked
		\$
10-15.....	42-50	4-56
16-17.....	40-21	7-15
18-19.....	39-70	10-20
20-24.....	40-31	15-20
25-34.....	41-19	21-84
35-44.....	42-28	27-38
45-54.....	41-53	28-95
55-64.....	40-05	26-73
65-69.....	38-25	23-49
70 and over.....	35-74	20-48
	years	years
Age of maximum.....	40-92	45-64

It may be objected that there is not a free market in labour, that influence—"pull"—counts almost as much in obtaining a job as skill. This is the case, but it is no objection to the theory, for we need only assume that getting a job depends on the possession of a combination of influence and skill, and then we can say that as between two groups of workers, that with the higher average productivity (i.e., the combination of skill and influence which is measured by average wages) will have the lower marginal worker.

The equilibrium theory works out as well on one basis as on the other. An employer may feel it equally suitable to himself to pay his son \$30 per week as bookkeeper or to pay a stranger \$20, if the two are of equal skill, since keeping the money in the family represents a moral and economic advantage to him. Precisely the same argument will hold with regard to employment. An *entrepreneur* will continue hiring men until he reaches the marginal worker—that one whose productivity is not great enough to yield a profit. But he will go below the margin for the sake of an acquaintance or a relative, though he will not take more than a certain amount of loss, the exact amount depending on his personal interest in the employee.

In agriculture, where the establishment is small and there is a large ratio of managers to workers, more young men will be able to find work with their fathers than will be the case in an industry such as manufacturing where the establishment is larger and there is a lower ratio of managers and employers to wage-earners. In manufacturing fewer persons will have filial relationship to the head of some establishment. By deducting, say, 25 years (approximately one generation) from the average age of employers we arrive in the age group 15-24. This age group would be the one in which relationship would be the most important factor in getting a job, because (a) it is the age at which a person's parents are most likely to be in a position to help him (at older ages they become, economically at least, senile); because also (b) at young ages few of the persons among whom a choice is to be made are likely to have gained a great deal of skill in any case.

Thus it may be anticipated that unemployment at younger ages would be greater in industries of large than in industries of small establishments. The chart and statement of five sample industries shows this for men quite plainly; the hump at the young ages decreases, steadily, when the industries are arranged in order of decreasing size of establishments (cotton goods at the top and women's clothing at the bottom). The ratio of unemployed 10-24 years of age to total unemployed likewise decreases.

PERCENTAGE OF MALE WAGE-EARNERS NOT AT WORK JUNE 1, 1931
AT VARIOUS AGES
FOR FIVE INDUSTRIES OF THE TEXTILE GROUP
ARRANGED IN ORDER OF
CAPITAL INVESTED PER ESTABLISHMENT

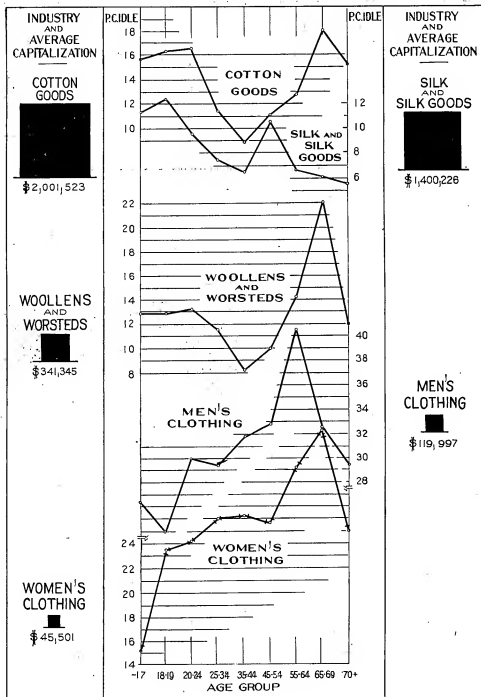


Chart 8

LXXXI.—SIZE OF ESTABLISHMENT AND UNEMPLOYMENT OF YOUNG PEOPLE IN FIVE RELATED INDUSTRIES, CANADA, 1931¹

Industry	Size of Establishment		P.C. Unemployed		Ratio of P.C. Unemployed Ages 10-24 to P.C. Total Unemployed Col. 4 ÷ Col. 3
	According to Capital (1)	According to Male Employees (2)	All Ages (3)	Ages 10-24 (4)	
	\$	No.			
Manufacturing—					
Cotton goods.....	2,001,523	247	13.33	16.17	121.31
Silk, silk goods.....	1,400,226	196	8.94	10.59	118.46
Woolens and worsteds.....	341,345	39	11.73	13.00	110.83
Men's clothing.....	119,997	28	30.94	27.94	90.30
Women's clothing.....	45,501	—	24.99	22.41	89.68

¹ Five largest industries in textile manufacturing group, taken from *The Manufacturing Industries of Canada, 1931*, pp. 23-29

These industries all ultimately cater to and depend on much the same market; the principal difference between them is the size of establishment.

Considering the broader industry groups of the census, we find that agriculture shows steadily rising percentage unemployed with age while finance—the opposite extreme—shows a steadily falling percentage. This corresponds to the circumstance that agriculture involves the greatest number of employers per worker while finance has the smallest. The intermediate industries will be seen to follow much the same rule.

There is no doubt, however, that in the matter of the size of the establishment as it affects the age incidence of unemployment, the circumstance mentioned acts in the same direction as the greater importance of seniority in a large than a small establishment. A large firm, long and solidly established can afford to recognize length of service, both in greater pay and in steadiness of employment, to an extent which would be too expensive for a smaller establishment. Again, the large establishment, especially if, as with a bank, insurance company or department store, it has dealings with the public, will far more than the small one make every effort to avoid dismissing those of its staff who are married and have family responsibilities (who will tend to be its older employees) in order to keep a good name in the community in which it deals. This policy will tend further to favour the older employees.

On account of our immigration history, we have an unusually large body of wage-earners at favourable ages, who, by their competition create unemployment at less favourable ages. As the present male wage-earners between 25 and 50 die or age, we can expect, with a more normal age distribution, i.e., with an increase in the ratio of dependent consumers to wage-earners, an amelioration of the unemployment situation. Time is working with Canada in this respect.

The measurable aspect of the problem may be stated thus: If the population had the life-table age distribution, what would be the total percentage of wage-earners and of unemployed, and their average salary, assuming age-by-age rates the same as now exist? Of course, age-specific rates would not be the same—they would be altered for the better by the larger proportion of infants and retired people in the stationary community. But even assuming them the same, the following changes would have taken place:—

- (1) Instead of 475 wage-earners in each thousand males there would be but 465.
- (2) Instead of 209 unemployed in each thousand male wage-earners there would be 205.
- (3) The average earnings of a wage-earner would be \$941 per year instead of \$927.

It would be absurd to say that any likely change in age distribution will solve the problem of unemployment; but we can say that, though small, its effect will be in the right direction.

Unemployment by Age and Province.—Statement LXXXII shows the percentages of males unemployed at various ages in the different provinces. The persistence of the bi-modal tendency is clearly brought out in these figures.

LXXXII.—PERCENTAGES OF MALE WAGE-EARNERS NOT AT WORK JUNE 1, BY AGE GROUP, CANADA, BY PROVINCES, 1931

Age Group	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	British Columbia	Sum	Sum of Squares
10-13.....	-	9.52	25.03	7.26	4.65	-	11.11	20.00	34.02	113.09	2559.3019
14-15.....	4.17	14.89	25.27	14.96	12.32	16.41	20.52	14.45	14.01	137.00	2348.6990
16-17.....	8.76	22.97	30.32	20.68	17.34	22.23	23.45	21.87	23.59	190.21	4284.6793
18-19.....	8.54	25.33	30.25	23.93	20.29	24.95	23.43	23.30	27.69	207.71	5095.0255
20-24.....	7.74	24.92	27.88	22.51	20.29	26.02	22.59	23.17	27.52	202.64	4858.1404
25-34.....	6.56	22.46	21.92	18.86	18.64	27.00	22.89	25.53	25.61	189.47	4291.7259
35-44.....	5.50	19.64	17.47	16.42	16.40	21.08	20.69	23.44	24.84	165.48	3298.6586
45-54.....	6.42	20.48	18.68	18.00	18.03	20.70	20.01	22.59	28.13	173.94	3625.9932
55-64.....	10.55	23.16	23.30	20.99	20.69	25.36	24.40	24.98	33.37	206.80	5035.2812
65-69.....	11.89	26.96	25.29	24.36	24.97	29.06	29.01	29.94	40.69	245.08	7118.5076
70 and over..	21.51	27.89	29.08	24.49	23.77	27.67	25.62	26.39	38.88	246.40	6945.3134
Sum.....	91.84	238.22	279.20	212.46	197.39	240.68	244.02	255.66	317.95	2077.82	-
Sum of Squares...	1056.8204	5453.2696	7294.1572	4366.5824	3855.5291	5929.2104	5636.2588	6095.1970	9774.3011	-	49461.3260

The table of variance below is an attempt to measure the interaction of "age" and "province" on unemployment. By the usual method, using no weights, we get the following results:—

LXXXIII.—VARIANCE OF UNEMPLOYMENT BETWEEN AGES AND PROVINCES, CANADA, JUNE 1, 1931

Item	Degrees of Freedom	Sum of Squares	Variance
Total.....	98	5,851	60
Between provinces.....	8	2,883	360
Between ages.....	10	1,838	184
Residual.....	80	1,130	14

The column "variance" is an estimate of the extent to which unemployment varies with province (360), with age (184), and with province and age jointly (14). The residual variance, marking the effect of province on age, or, more exactly, the interaction of the two with regard to unemployment, is seen to be very small compared with the variance between ages (14 to 184). This ratio is a measure of the differences to be expected between the age-curves from province to province. We shall see later that it is much smaller than the ratio of residual variance to age variance in the age-by-industry table. The inference is that the curve of percentage unemployed by age varies more between industries than between provinces. In fact, much of the difference which does appear between provinces is due to the existence of different industries in the several provinces.

To separate in general the effects of population background and industrial* structure on the age profile of unemployment would be difficult, but in certain instances we may do so. The relatively low unemployment shown by British Columbia at younger ages is in part, at least, due to her peculiarly "middle-aged" population, the result of exceptionally heavy immigration within the last twenty years. Her shortage of younger people is reflected in comparatively low unemployment at ages 15-25; and in the same way her excess of middle-aged people (55.9 p.c. of her males are between 25 and 65, as against 45.2 p.c. for males in all Canada) results in phenomenally high unemployment at middle ages.† Prince Edward Island has low unemployment at younger ages on account of her predominantly agricultural economy; Alberta shares the characteristics of both Prince Edward Island and British Columbia in this respect.

*Most writers on unemployment recognize that the question of their relationship to one another is very difficult. Vladimir Woytinsky gives the formula $CH = S - \frac{V}{T}$ when CH = no. of unemployed, S = salaried workers, V = total volume of production and T = output per man.

†Mr. M. C. MacLennan's work, 1931 Census Monograph on "Ages" brings out very clearly the effects of the various age types on social factors.

The variability in unemployment of the different ages by provinces* was measured and the following results were obtained:—

Age Group	Coefficient of Variability by Province of Unemployment, June 1, 1931
Under 17.....	-1580
18-19.....	-1285
20-24.....	-1181
25-34.....	-1500
35-44.....	-1702
45-54.....	-1752
55-64.....	-1816
65-69.....	-1859
70 and over.....	-1629

When two areas are compared, it will often happen that unemployment in one is much greater than in the other, though it would seem on the basis of equilibrium economics that population in the district of worse employment conditions would move to the district of better until the chances of getting a job in both were equalized. Many considerations ordinarily prevent such wholesale moving, the possession of property (always difficult, and sometimes, as in the case of land and buildings, impossible, to move), family and community ties, and, most important of all, the receipt of direct relief. A man who leaves his home town in search of a job will certainly not be able to get relief elsewhere for a considerable period—at least six months residence is usually required—and in the meanwhile he loses his relief status in his own community and may have great difficulty in again getting his name on the rolls.

This reluctance to move, of course, varies with age. The figures given above are an attempt to measure the differential tendency by ages and they show that the period of the 20's has the lowest variability, the 60's has the highest, and also that the figure is higher under age 17 than between 20 and 24.

We would expect that in the 20's, after a man has become independent of his parents and before he has in turn assumed parental responsibility, before he is likely to have accumulated a large amount of property and before his personal habits have become fixed, while he has the energy and initiative which are so often lost with advancing age, he is likely to strike out for himself and will move to some place other than his home town if opportunity seems to call. Minimum unemployment variability for males between provinces is at the age of 24-6 years, i.e., about 25 seems to be the age of maximum mobility, if we assume that when movement occurs it will tend to be away from regions of high unemployment and towards regions of relatively low unemployment. From one city to another, from city to farm, from province to province, there will be movement at the more adaptable ages towards the goal of the higher plane of life represented to-day by a steady job. While a moving population is not in itself a desirable thing, yet it would be unfortunate if the manner of administering relief was such as to fail to encourage the youthful elements of the community, who have the quality of adaptability and few ties of family or property, to seek employment to the utmost of their ability.

Duration of Unemployment at Different Ages.—In examining the distribution of wage-earners losing time by the weeks they lost, it was found that there were, in every age group, about twice as many persons opposite the duration 25-28 weeks as opposite 21-24 or 29-32. It was plain that the enumerated population had tended to state their term of unemployment as "about six months", when it was anywhere between 20 and 30 weeks. Some kind of graduation was called for before the duration distributions for different ages could be compared.

An attempt at graduation by a least-squares parabola gave a not unsatisfactory result. By fitting a parabola to the distribution over the period 0-40 weeks only, it was hoped to eliminate the effects of the artificial upper limit of one year and obtain the true modal point. The modal points for the various age groups are shown in Chart 9.

*Coefficient of variability = $\frac{\sigma}{m}$ where σ = standard deviation and m = arithmetic mean. The items were weighted by the number of men exposed in each age-province class. See Appendix 7, p. 358.

COMPARISON OF P.C. LOSING ANY TIME, P.C. NOT AT WORK JUNE 1,
AVERAGE WEEKS LOST DURING YEAR AND AVERAGE AND MODAL
WEEKS LOST PER WAGE-EARNER LOSING TIME, BY AGE, CANADA
YEAR ENDED JUNE 1, 1931

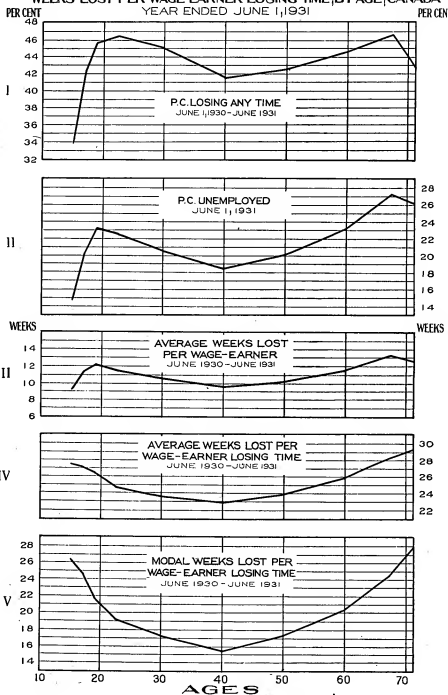


Chart 9

LXXXIV.—FIVE MEASURES OF UNEMPLOYMENT GIVING (a) DECREASING WEIGHT TO CHANCE OF A MALE WAGE-EARNER NOW EMPLOYED BECOMING UNEMPLOYED AND (b) INCREASING WEIGHT TO THE PROBABLE DURATION OF HIS UNEMPLOYMENT ONCE HE LOSES HIS JOB, CANADA, YEAR ENDED JUNE 1, 1931

Age Group	I P.C. Losing Any Time	II P.C. Un- employed June 1, 1931	III Average Weeks Lost per Wage- Earner	IV Arithmetic Mean of Weeks Lost per Wage- Earner Losing Time	V Modal Weeks ¹ Lost per Wage- Earner Losing Time
All ages.....	44.00	20.87	10.68	24.28	18.03
14-15.....	33.89	14.85	9.28	27.38	26.31
16-17.....	42.44	20.33	11.48	27.06	24.72
18-19.....	45.86	23.14	12.05	26.28	21.73
20-24.....	46.48	22.62	11.46	24.66	19.07
25-34.....	45.05	20.73	10.61	23.54	17.25
35-44.....	41.55	18.41	9.51	22.90	15.32
45-54.....	42.70	20.08	10.21	23.62	17.31
55-64.....	44.72	23.16	11.59	25.63	20.32
65-69.....	46.71	27.25	13.26	28.39	24.44
70 and over.....	42.70	26.15	12.49	29.28	27.06

¹ By least-squares parabola.

The series of curves I to V, counting from top to bottom of Chart 9, all relating to unemployment by age, give differing degrees of emphasis to the two elements (a) chance of a wage-earner now employed becoming unemployed, (b) the probable duration of his unemployment once he loses his job. In all unemployment statistics these two elements are mixed—though in varying proportions. An attempt has been made to arrange the five curves in such an order that (a) chance of a worker now employed becoming unemployed is of decreasing importance from I to V and (b) chance of a worker now unemployed remaining unemployed—is of increasing importance. To separate these two elements entirely is impossible, partly because there is a tendency for the enumerated population to fail to report short periods of time lost, partly because the period covered by the census questions is only one year, partly because only the total unemployment for individuals is given, no distinction being made between six months at one time and six separate months throughout the year.

Curve I gives the percentage losing any time during the course of the year. No account at all is taken of the "length of time unemployed" for each person losing time. It will be seen that very low rates are shown at the young and the old ages; and that the ages from about 22 to 67 show the characteristic U-shaped curve.

Curves II and III each involve almost equal elements of (a) and (b). It will be seen that though the young and old ages are both lower than some of the middle ages, yet they do not dip as far below as in Curve I.

Curve IV gives average weeks lost per worker losing time and therefore contains no element of the chance of becoming unemployed for those actually working. It shows no dip at all at either extremity. It does, however, count the wage-earner out of work for the one-year period June, 1930-June, 1931 only, for just as much unemployment as the one who was out the previous ten years as well.

Curve V was obtained by passing a second degree parabola through the histogram formed by the duration-distribution of unemployment in the several age groups. The process is indicated in Appendix 8.

Curve IV may be regarded as the locus of the arithmetic means of the histograms and Curve V as the locus of their modes. As Curve V makes no assumption as to the longer periods of unemployment and Curve IV assumes they are all equal to one year, the former can be expected to approximate better the theoretical shape of (b) representing pure duration in our discussion above. If the histograms are plotted in detail for the various age groups they appear extremely irregular and show little relation to one another; but by the least-squares process we have found a regular sequence of modal points for the successive age groups.

If we compare Curves IV and V at the last age groups, we find that whereas Curve IV shows but a slight increase from 65-69 to 70 and over, Curve V shows a considerable increase. Had the arithmetic mean durations given in IV been taken on the basis of the true periods of unemploy-

ment (instead of on the assumption that the maximum time lost was one year) a greater increase above the preceding group would have appeared in the average duration of unemployment among workers over 70.

We may regard the limiting value* as we pass from I down to V as the curve for (a), viz., the values for the various ages, under perfect reporting of unemployment, in the chance of an individual now out of work getting a job; the limiting value in the other direction represents the chances of a person now employed falling into the ranks of the unemployed. Thus as between the middle ages of life the ideal curve (a) would seem to follow ideal curve (b) but it can be seen that while curve (a) would show very old men and boys more secure in their jobs (once they are employed) curve (b) would show these less efficient age classes as having more difficulty obtaining employment when they are once out of work.

The final method of graduation adopted for duration figures was by a truncated normal†. This was suggested by the following theoretical considerations:—

(1) That the entire wage-earning body might be regarded as liable to unemployment, being distributed normally with respect to such liability. Only those whose liability was above a certain amount (*viz.*, zero) would be represented by the census as liable to unemployment; and the degree of liability of these would be measured by the number of weeks they lost during the year.

(2) That the possible number of weeks that can be lost by the wage-earner whose employment is least stable will tend towards an indefinitely large number, if all time rather than merely one year is considered as the period of exposure.

The following statement gives the modal point and the standard deviation of the uncurtailed normal curve fitted by the method of moments for males and females respectively:—

LXXXV.—MODE AND STANDARD DEVIATION OF UNCERTAILED NORMAL CURVE OF WHICH STUMPS HAVE BEEN FITTED TO DURATION-DISTRIBUTION OF UNEMPLOYMENT FOR SEVERAL AGE GROUPS, CANADA, YEAR ENDED JUNE 1, 1931

Age Group	Duration of Unemployment in Weeks			
	Males		Females	
	Mode	Standard Deviation	Mode	Standard Deviation
All ages.....	11.40	15.42	— 35.58	27.68
14-15.....	15.62	14.53	11.51	16.37
16-17.....	15.82	14.33	2.76	19.01
18-19.....	14.80	14.46	— 13.23	22.07
20-24.....	12.93	14.76	— 78.68	34.93
25-34.....	10.46	15.57	— 172.13	46.97
35-44.....	7.98	16.46	— 39.11	27.99
45-54.....	10.57	15.55	— 21.02	24.61
55-64.....	13.74	14.76	0.89	19.78
65-69.....	17.24	13.53	9.78	16.36
70 and over.....	18.98	12.94	8.65	16.98

The mode of the truncated normal seems to represent the centre of unemployment. It is, of course, at a lower number of weeks than the mode of the parabola, but follows very closely the trend from age to age of the latter. It reaches its minimum for males at ages 35-44 where it is 7.98 weeks, having fallen steadily from 15.82 weeks at ages 16-17; subsequently it rises by remarkably uniform steps to 18.98 weeks for the group aged 70 and over. For females, where unemployment rates are much lower, the mode of the normal curve stands at 11.61 weeks at ages 14-15 and drops to -172.13 weeks at ages 25-34. Subsequently there is a rise to a peak of 9.78 weeks at ages 65-69.

The standard deviations vary less both for males and for females than the modes but their trends are equally definite. For the age-sex groups at which unemployment is low the standard deviation is large; for those at which unemployment is high, the standard deviation is small. The steadiness of the rise to a peak (at ages 35-44 for males and 25-34 for females) and of the subsequent falls are particularly notable. Since a small standard deviation means a more

*The conception of a limiting or ideal curve to which a given set of curves are tending is familiar in mathematics. A limiting value is one which the terms of a series are continually approaching but which they never reach.

†For method used, see Appendix 5, p. 355.

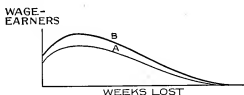
definite average or centre for a distribution, while a large standard deviation means an indefinite centre, we have here the evidence that the more unemployment there is in a sex-age group the more definite the average about which individual wage-earners losing time will group. Where unemployment is light the curve of distribution is flat—spread out, as though determined by random individual cases with no common law; when heavy the central tendency is strong and a similarity in the circumstances of all of the unemployed is indicated, which makes the modal duration of unemployment truly a typical representative measure.

From the evidence available, the mode and standard deviation of the uncurtailed normal curve seem to give good relative representations of the position and the definiteness, respectively, of the "centre" of unemployment.

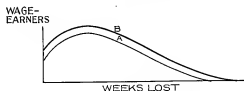
It is interesting to observe that the modal points of both the parabola and normal fitted to the duration figures show a far greater similarity to the earnings curve by age than the "frequency" (i.e., the chance of a wage-earner now employed losing his job) measures of unemployment. It seems that the relatively low productiveness of very old and very young people is best measured, therefore, by the duration, rather than the frequency, of their unemployment.

Before starting the above investigation a consideration of the possible forms of the "weeks lost" distribution seemed to indicate that if, of two age groups *A* and *B*, *A* has less unemployment, then the two distributions might be related to one another in any of the following ways:—

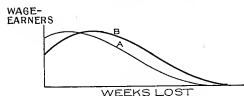
(1) Distribution *A* might be lower in proportion to its height, i.e., $f_A(w) = \frac{1}{K}f_B(w)$ where $K > 1$ and $f(w)$ refers to the frequency for a particular week group.



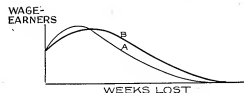
In this case the entire curve *A* would be flatter and lower than *B*, its ordinates being a constant proportion $\frac{1}{K}$ of *B*.



(2) It might happen that $f_A(w) = f_B(w) - K$, where $K > 0$ and Curve *B* would simply be curve *A* lowered by a constant amount K .



(3) It might happen that *A* would be obtained from *B* by a shifting to the left, so that $f_A(w) = f_B(w + K)$, where K is a certain number of weeks, $K > 0$.



(4) It might happen that *A* would be obtained from *B* by shrinkage towards the left, $f_A(w) = f_B(Kw)$, $K > 1$.

The evidence given by the fitting of a truncated normal shows that in general where there is an increase of unemployment from group *A* to group *B*, two changes take place. There is a sideways shrinkage (as in case 4 above), which decreases the volume of unemployment—but this is more than compensated for by the shifting of the whole curve to the right (as in case 3 above).

For women, the standard deviations of the uncurtailed normals vary more from age to age than for men. We find a sharper closing in of the curve towards old age, *i.e.*, a greater decrement from the ranks of the unemployed.

According to Table 28 of Volume VI of the 1931 Census the average weeks lost by all female wage-earners rises to a peak at ages 65-69. From the same table we find, however, that this peak is shown but very slightly in the percentages losing any time, while it is intensified in the average weeks lost by those losing time; thus we can attribute it almost entirely to greater duration, not to greater frequency of unemployment. This is different from the picture presented for males at ages 70 and over where rising duration is accompanied by falling frequency. Both cases show the importance of analysing a given percentage unemployment at one moment (or what is almost the same thing, a given average number of weeks lost by all wage-earners) into the two components of frequency and duration. The frequency and duration are roughly correlated, yet the variation of the one when the other remains fixed is great enough in amount to be very important from the point of view of relief and unemployment insurance.

Another illustration of the importance of taking these two factors into account is in agriculture. We have pointed out that the percentage unemployed on June 1 in this occupation rises steadily from the very youngest ages to about 65. So also, as we should expect from this, does the average weeks lost by all wage-earners. This, of course, is contrary to the trend by age of most other occupations, which usually are high in unemployment around ages 20-24. But, as Statement LXXXVI below shows, this almost steady rise of column 2, from ages 10-24, is made up of a combination of a sharp rise in column 1 and a less sharp fall in column 3, these being the two components of column 2.

LXXXVI.—PERCENTAGES LOSING TIME AND AVERAGE NUMBER OF WEEKS LOST DURING YEAR BY ALL MALE WAGE-EARNERS AND BY THOSE LOSING TIME, IN THE AGRICULTURAL OCCUPATIONS, BY AGE GROUP, CANADA, YEAR ENDED JUNE 1, 1931

Age Group	P.C. Losing Time (1)	Average Weeks Lost by	
		All Wage Earners (2)	Those Losing Time (3)
Under 17.....	24.58	8.50	26.43
18-19.....	27.29	6.49	23.79
20-24.....	30.52	7.04	23.07
25-44.....	35.66	8.83	24.77
45-54.....	38.14	9.78	25.63
55-64.....	40.48	10.79	26.66
65-69.....	38.80	11.32	29.17

If, after we had fitted the normal curve, we found that the proportion of the stump to the whole was approximately equal to the percentage losing time, we should have proven that liability to unemployment is truly a normal distribution, being negative for those not losing any time during the year. Among the sex-age groups, however, males of 20-24 (with 46 p.c. losing time) show about 72 p.c. of their curve on the right-hand side of zero. This was in 1931, a year of worse than average unemployment in a group very much affected. For females at 25-34, on the other hand, the part of the normal curve on the right-hand side of zero is a smaller portion (less than 1 p.c.) of the whole than the percentage of females losing any time (25 p.c.). Females of this age were an especially favoured group. Somewhere between the two cases, say at the level of unemployment of 30 p.c. losing some time during the year, a condition that we might call average unemployment exists where the percentage losing time is exactly equal to the percentage

of the area of the normal curve that appears on the right-hand side of zero. In such a group, liability to unemployment is normally distributed ranging from minus infinity for those most secure in their jobs up to a lifetime of unemployment for those least able economically. In sex-age groups where unemployment is lower than this level of 30 p.c. losing time during the year (which corresponds to about 15 p.c. idle at any given moment) the area of the normal curve on the left-hand side of zero tends to be greater than necessary to represent the constantly employed workers, while when unemployment is higher than this level the area on the left-hand side of zero tends to be less. The statement below gives the results of the numerical calculation; it can be seen that no very strict relationship seems to exist; it is believed that a year of more normal employment would show a more definite relation between columns 2 and 3, and 5 and 6.

LXXXVII.—FRACTION OF FITTED NORMAL CURVE ON RIGHT-HAND SIDE OF ZERO AND PERCENTAGE OF WAGE-EARNERS LOSING TIME, BY AGE GROUP, CANADA, 1931

Age Group	Males			Females		
	$\frac{n}{\sigma}$	Fraction of Normal Curve on Right-Hand Side of Zero	P.C. Losing Time	$\frac{n}{\sigma}$	Fraction of Normal Curve on Right-Hand Side of Zero	P.C. Losing Time
	(1)	(2)	(3)	(4)	(5)	(6)
All ages.....	0.480	0.684	44.00	-1.430	0.076	25.14
14-15.....	0.800	0.788	33.89	0.465	0.670	30.63
16-17.....	0.825	0.795	42.44	-0.065	0.474	36.13
18-19.....	0.747	0.772	45.86	-0.750	0.227	31.17
20-24.....	0.605	0.727	46.48	-2.367	0.009	24.98
25-34.....	0.415	0.661	45.05	-3.750	0.00009	21.65
35-44.....	0.242	0.596	41.15	-1.540	0.092	21.42
45-54.....	0.420	0.663	42.70	-1.017	0.155	21.48
55-64.....	0.660	0.745	44.72	-0.247	0.402	20.73
65-69.....	0.979	0.836	46.71	0.353	0.638	20.47
70 and over.....	1.158	0.877	42.70	0.274	0.608	13.17

Age and the Causes of Unemployment.—The curve of total unemployment by age follows very closely the curve of percentage unemployed by age on account of "no job", as is to be expected since the latter is by far the largest component of the former (see Chart 10 and Statement LXXXVIII).

The other components are quite different. "Illness" rises steadily from the youngest ages to the oldest. "Temporary lay-off" is very low in youth since an individual must, to a certain extent at least, be entrenched in a job before he is exposed to the risk of temporary lay-off. In fact, the chart shows that this cause of unemployment attains maximum importance at precisely those ages where earnings and total weeks worked are highest, between ages 30 and 50. Judging from the smoothness of this curve and the way in which it follows the earnings curve, we may conclude that the cause "temporary lay-off" as distinct from "no job" was on the whole correctly interpreted by the enumerator and the enumerated. This view is strengthened by the fact that the average duration for "lay-off" among males is 15.36 weeks as against 26.56 weeks for "no job."

In the accident curve there is a well marked and steady rise from the younger to the older years of life. This corresponds to the trend of the curve of accidental death by age, as found by insurance company experience on the so-called "Double Indemnity"* policy. This latter trend by age may be expected to be similar because, among those exposed to the risk of incapacitation by accident, there will be a certain percentage (approximately constant for different ages) of deaths due to accident.

*A policy which pays double the sum assured in the event of accidental death.

WEEKS LOST BY MALE WAGE-EARNERS DUE TO VARIOUS CAUSES, IN CANADA YEAR ENDED JUNE 1, 1931

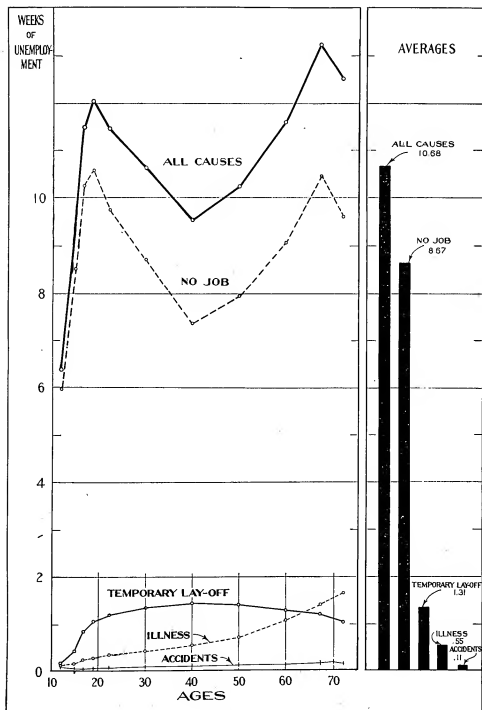


Chart 10

LXXXVIII.—AVERAGE WEEKS LOST BY WAGE-EARNERS, BY CAUSE, AGE GROUP AND SEX, CANADA, YEAR ENDED JUNE 1, 1931

Age Group	Average Weeks Lost Due to									
	All Causes		No Job		Lay-Off		Illness		Accident	
	Males	Females	Males	Females	Males	Females	Males	Females	Males	Females
All ages.....	10.68	5.29	8.67	3.90	1.31	0.79	0.55	0.51	0.11	0.02
10-13.....	6.38	4.61	5.95	4.23	0.20	0.35	0.12	0.01	0.05	—
14-15.....	9.28	7.82	8.53	6.79	0.43	0.67	0.17	0.18	0.03	0.01
16-17.....	11.48	8.77	10.26	7.29	0.84	1.07	0.24	0.28	0.06	0.01
18-19.....	12.05	6.90	10.55	5.43	1.07	1.00	0.29	0.37	0.07	0.01
20-24.....	11.46	4.99	9.75	3.62	1.20	0.80	0.30	0.48	0.06	0.02
25-34.....	10.61	4.24	8.70	2.88	1.35	0.68	0.42	0.61	0.00	0.02
35-44.....	9.51	4.40	7.38	2.97	1.44	0.71	0.54	0.63	0.11	0.03
45-54.....	10.21	4.58	7.03	3.18	1.40	0.68	0.71	0.64	0.13	0.04
55-64.....	11.59	4.76	9.04	3.33	1.29	0.56	1.06	0.75	0.16	0.07
65-69.....	13.26	5.05	10.42	3.51	1.20	0.56	1.40	0.80	0.19	0.06
70 and over.....	12.49	3.08	9.57	2.14	1.07	0.30	1.65	0.54	0.14	0.06

From the weeks lost by wage-earners on account of illness and accident we can make up a table showing at each age the probability of a Canadian wage-earner becoming ill, or disabled by accident. These figures might serve as premiums for a health insurance project to apply to a group taken from the general Canadian wage-earning population (conditions being such that there would be no adverse selection against the insurer). The rates obtained for males and for females are as below, in weeks of lay-up on account of sickness and accident per thousand man-weeks.

LXXXIX.—PROBABLE NUMBER OF WEEKS IDLE CAUSED BY ILLNESS AND ACCIDENT PER 1,000 WORK-WEEKS, BY AGE GROUP

Age Group	Weeks Idle Calculated from 1931 Census Data		Age	Weeks Idle Calculated from Insurance Company Disability Tables ¹	
	Males	Females		Males	Females
14-15.....	3.8	3.6	15.....	4.49	5.98
16-17.....	5.8	5.6	16.....	4.24	6.24
18-19.....	6.9	7.5	17.....	4.03	6.54
20-24.....	9.4	9.5	18.....	3.76	7.30
25-34.....	9.8	12.1	19.....	3.99	9.71
35-44.....	12.0	12.5	20.....	5.57	13.82
45-54.....	10.3	13.1	21.....	9.21	16.65
55-64.....	22.5	15.7	22.....	14.39	21.09
65-69.....	30.5	17.8			
70 and over.....	34.5	11.5			

¹ Transactions of the Actuarial Society of America, Volume XXX, pp. 410, 427.

The rates calculated follow generally the trend of rates based on the disability experience of insurance companies, but are somewhat higher throughout. The lower rates of females at the older ages suggest that the less healthy women drop out of the wage-earning group.

The average ages of wage-earners losing time through various causes by the weeks of time they lost during the census year, 1930-31 are as follows:—

	Males	Females
All causes.....	36.7	26.9
No job.....	36.2	26.4
Temporary lay-off.....	37.5	27.0
Illness.....	43.0	30.8
Accident.....	40.3	34.2
Strike or lock-out.....	35.9	26.2

The average age for "no job" is slightly under that for "all causes." "Temporary lay-off," because it affects persons at least partially secured in their jobs, has a somewhat higher average

than "no job." Since liability to illness increases through life, its average is higher than "all causes" by 6.3 years in the case of men and 3.9 years in the case of women. The tendency to accident is known to be greater for higher ages than for younger. "Strike or lockout" has the lowest average age being 0.8 years younger than "all causes" for males and 0.7 for females. Industrial disputes apparently tend to involve the younger members of the working community.

Those industries with a high rate of unemployment on account of "no job" were likewise those with a high rate of "temporary lay-off," while as between ages, those with high "no job" rate had low "temporary lay-off" rates. It is an illustration of the important distinction between age (representing the personality of the worker) and industry (representing the market for his labour) that "no job" and "temporary lay-off" correlate positively when taken with regard to the latter and negatively when with regard to the former.

We have seen that illness takes an increasing number of weeks with increasing age. The tabular statement below shows that it also becomes more important compared with other causes of unemployment. Of total weeks lost by men in the 20-24 age group 3 p.c. were lost on account of "illness" and 85 p.c. on account of "no job"; at age 45-54 "illness" took 7 p.c. and "no job" 78 p.c. The table shows that the trend of the relative importance of illness runs fairly smoothly through the ages.

XC.—PERCENTAGE OF TOTAL WEEKS LOST FOR EACH CAUSE BY MALE WAGE-EARNERS LOSING TIME DURING YEAR, BY AGE GROUP, CANADA, YEAR ENDED JUNE 1, 1931

Cause of Unemployment	P.C. of Total Weeks Lost in Age Group										
	All Ages	14-15	16-17	18-19	20-24	25-34	35-44	45-54	55-64	65-69	70 and over
All causes.....	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No job.....	81.17	91.97	89.37	87.78	85.33	82.05	77.57	77.66	77.98	78.59	76.58
Temporary lay-off.....	12.25	4.64	7.33	8.85	10.48	12.75	15.17	13.69	11.15	9.02	8.58
Illness.....	5.19	1.84	2.13	2.42	3.10	3.93	5.71	6.98	9.18	10.57	13.25
Accident.....	1.00	0.29	0.51	0.56	0.72	0.59	1.17	1.31	1.35	1.40	1.12
Strike or lockout.....	0.04	0.01	0.03	0.04	0.05	0.05	0.05	0.04	0.03	0.04	0.02
Other causes.....	0.34	1.25	0.63	0.36	0.32	0.33	0.32	0.31	0.31	0.38	0.45

Like "illness," "accident" rises steadily throughout life accounting for .51 p.c. of all time lost at age 16-17 and steadily rising amounts at later ages to 1.40 p.c. at 65-69, then dropping off to 1.12 p.c. at 70 and over. Perhaps the drop is due to the withdrawal of men at the very old ages from the more dangerous occupations.

"Strike or lockout" rises from 0.01 at ages 14-15 to 0.05 at 25-34, and declines to 0.02 at ages over 70. With it may be classed "temporary lay-off" which shows a similar steady rise from young to middle age (7 p.c. at 16-17 to 15 p.c. at 35-44) and the same decline in later life (to 9 p.c. at ages 65-69). It is reasonable that these should show similar trends, for both are applicable to the period of life when economic productiveness is greatest, the persons affected being only those who were at work shortly before.

We noticed in the section on duration by age, that at the middle ages, where unemployment rates were lowest, both the number of wage-earners losing time and the length of time they lost were at a minimum. This relationship of frequency of unemployment to its duration is apparent also in the analysis by causes (Statement XCI). "No job" shows the characteristic U-shaped curve for duration which we observed for frequency, "illness" and "accident" the same steady rise toward old age. "Temporary lay-off" fails to follow the rule, showing somewhat of a rise

toward the younger and the older ages, indicating, what a reading of the enumerations suggests, that a certain number of cases of unemployment due to "no job," have been classified as "temporary lay-off" in addition to the fact that middle-aged men are probably taken back sooner after a lay-off than young or old ones.

XC1.—AVERAGE WEEKS LOST BY MALE WAGE-EARNERS 10 YEARS OF AGE AND OVER LOSING TIME, BY CAUSE AND AGE GROUP, CANADA, YEAR ENDED JUNE 1, 1931

Age Group	Average Weeks Lost Due to				
	All Causes	No Job	Lay-Off	Illness	Accident
All ages.....	24.28	26.50	15.35	12.60	11.80
10-13.....	26.38	27.81	17.13 ¹	8.78 ¹	6.80 ¹
14.....	28.28	28.98	18.38	10.60	9.55 ¹
16.....	27.13	28.47	14.57	8.06	9.04 ¹
16-17.....	27.00	28.73	15.93	9.91	9.61
18-19.....	26.28	28.16	15.90	10.26	9.81
20-24.....	24.60	26.40	15.48	10.93	10.33
25-34.....	23.54	25.69	15.21	10.88	10.01
35-44.....	22.90	25.52	15.22	11.51	11.62
45-54.....	23.92	26.55	16.20	13.37	12.96
55-64.....	25.93	28.45	15.51	16.27	14.80
65-69.....	28.39	30.47	16.51	19.00	17.22
70 and over.....	29.26	30.88	17.87	20.84	18.54

¹ Less than 25 persons.

The Joint Action of Age and Industry in Unemployment.—In any given age group there seems on inspection to be more fluctuation from industry to industry (see Statement XCIII and Chart 11) than there is from age to age in a given industry. This corresponds to the figures obtained previously (.0932 for the age-to-age variation in "all industries" and .6148 for the industry-to-industry variation in "all ages").

We can measure the age variance, the industry variance, and the age-industry joint variance by the usual method for the table of percentage unemployment by industry and province.

XCII.—VARIANCE OF AGE AND INDUSTRY IN UNEMPLOYMENT, CANADA, JUNE 1, 1931

Variant	Degrees of Freedom	Sum of Squares	Variance
Ages.....	9	411	46
Industry.....	8	11,133	1,392
Age-Industry.....	72	760	11
Total.....	89	12,304	138

The variance of industry is considerably greater than that of age, while the industry effect on age (or the age effect on industry) is small compared with either separately. The variance of industry relative to age is about 30 to 1, or not far from what we established it to be when we calculated each separately with weights.

Statement XCV shows the percentage age distribution of wage-earners and unemployed, respectively. It is plain that some industries show greater differences between their wage-earners and their unemployed than do others. If we calculate the sum of the squares of the differences of

**PERCENTAGE OF MALE WAGE-EARNERS
NOT AT WORK JUNE 1, 1931
AT VARIOUS AGES FOR THE DIFFERENT INDUSTRIES
CANADA**

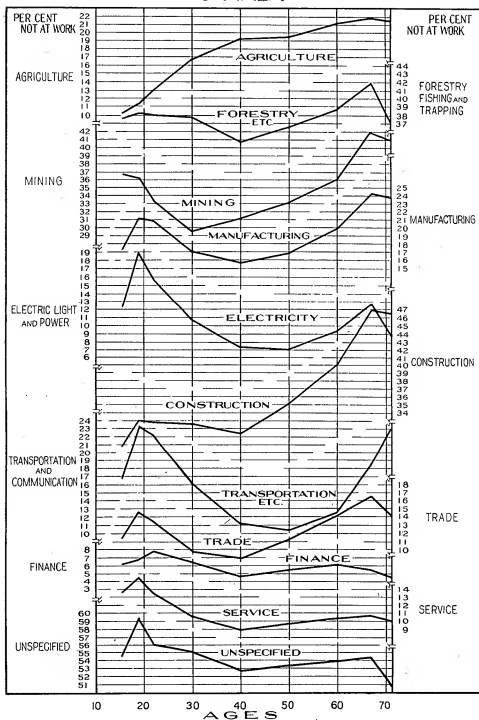


Chart 11

XCIII.—PERCENTAGES OF MALES NOT AT WORK JUNE 1, BY INDUSTRY AND AGE GROUPS, CANADA, 1931

Age Group	P.C. Not at Work June 1, in Industry										Sum	Sum of Squares
	Agriculture	Forestry, Fishing, and Trapping	Mining	Manu- facturing	Electric Light and Power	Construc- tion	Transporta- tion and Communi- cation	Trade	Finance	Service		
Under 17.....	10-15	37-41	36-77	17-16	12-24	29-96	16-76	11-45	6-25	13-57	191-72	4,831-6558
18-20.....	11-27	38-17	36-26	21-11	18-89	33-04	23-30	14-61	6-95	15-53	219-13	5,838-6807
20-24.....	13-01	37-95	33-30	20-72	15-75	32-81	22-19	13-53	7-86	13-41	210-53	5,389-2943
25-34.....	16-65	37-87	29-61	17-02	10-77	32-69	16-13	9-80	6-42	10-42	187-38	4,568-4306
35-44.....	19-17	34-65	31-04	15-50	7-29	31-32	11-24	9-02	4-76	8-84	172-83	4,114-4307
45-54.....	19-34	36-50	33-01	16-82	7-08	35-04	10-45	11-18	5-46	9-73	184-61	4,715-4655
55-64.....	21-07	38-61	36-07	19-75	9-31	40-06	12-57	14-28	6-15	10-30	208-17	5,823-0999
65-69.....	21-95	41-80	41-89	24-23	12-71	46-93	18-61	16-63	5-45	10-71	240-91	7,702-1721
70 and over.....	21-49	37-14	40-98	23-66	8-82	46-44	23-04	14-22	4-56	9-96	230-31	7,167-8669
Sum.....	154-10	340-10	318-93	175-97	102-86	328-29	154-29	114-72	53-86	102-47	1,845-50	-
Sum of squares.....	2,806-6100	12,881-0206	11,440-7817	3,519-2099	1,299-9682	12,307-0215	2,847-0793	1,512-6920	331-1488	1,206-5445	-	50,151-0665

the percentages of wage-earners and unemployed for a given industry in the several age groups, we get the following sequence of industries, arranged from greatest to least:—

XCIV.—INDUSTRY GROUPS RANKED IN DESCENDING ORDER OF MAGNITUDE OF THE SUMS OF THE SQUARES OF THE DIFFERENCES IN PERCENTAGES OF WAGE-EARNERS AND UNEMPLOYED IN EACH AGE GROUP, CANADA, JUNE 1, 1931

Rank	Industry Group	Sum of Squares
1	Electric light and power.....	149
2	Transportation and communication.....	120
3	Finance.....	60
4	Agriculture.....	54
5	Trade.....	49
6	Service.....	30
7	Manufacturing.....	18
8	Construction.....	9
9	Mining.....	8
10	Forestry, fishing, and trapping.....	3
11	Unspecified.....	1

It can be seen that the industry groups most highly "organized" (in the sense in which the word is used in Chapter III) are those which come at the top of the statement. Somewhat exceptional is the position of agriculture which ranks too high on the list; perhaps the apparent exception it offers throughout this study is due to its wage-earners constituting a poorer sample of its total personnel than is the case in other industries.

The arrangement indicates that the employed wage-earners in the highly organized industries tend to be a class separate from the unemployed in those industries, the latter being mere hangers-on; in the cyclical industries on the other hand, whether or not a man is working is rather a matter of chance, hence the result that the unemployed are in the same class, as to age at least, as the wage-earners.

XCV.—PERCENTAGE DISTRIBUTION OF MALE WAGE-EARNERS 10 YEARS OF AGE AND OVER AND UNEMPLOYED, BY INDUSTRY AND AGE GROUPS, CANADA, JUNE 1, 1931

No.	Age Group	All Industries		Agriculture		Forestry, Fishing, and Trapping		Mining		Manufacturing	
		Wage-Earners	Unemployed	Wage-Earners	Unemployed	Wage-Earners	Unemployed	Wage-Earners	Unemployed	Wage-Earners	Unemployed
		p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.
1	All ages.....	100-00	100-00	100-00	100-00	100-00	100-00	100-00	100-00	100-00	100-00
2	Under 17.....	3-72	3-45	8-71	5-69	3-28	3-31	1-53	1-77	3-61	3-48
3	18-19.....	5-34	5-92	10-48	7-56	5-23	5-37	3-37	3-82	5-10	6-05
4	20-24.....	15-25	16-03	24-05	20-13	16-75	17-11	12-65	13-15	14-27	16-61
5	25-34.....	26-66	26-47	27-74	29-70	29-59	30-17	31-63	29-23	26-60	25-44
6	35-44.....	21-65	19-10	13-03	10-06	20-27	18-01	24-73	23-36	22-60	19-73
7	45-54.....	16-19	15-58	8-50	10-69	14-72	14-46	16-93	17-44	16-94	16-01
8	55-64.....	8-09	8-98	4-98	6-74	7-28	7-57	7-22	8-13	8-10	8-99
9	65-69.....	1-95	2-44	1-48	2-09	1-83	2-06	1-34	1-75	1-79	2-43
10	70 and over.....	1-15	1-44	0-95	1-31	1-03	1-03	0-60	0-76	0-94	1-25

Since it happens to be the industries with considerable unemployment that show the most similarity between wage-earners and unemployed, it might be suspected that the reason for the greater similarity of these "depressed" industries was simply the fact that their wage-earners included so many unemployed, and that, therefore, a mathematical necessity existed for the result obtained. To avoid this objection the whole process was repeated, using the distribution of wage-earners working on the one hand, and of unemployed, as before, on the other. The result previously obtained was brought out even more strongly:—

XCVI.—INDUSTRY GROUPS RANKED IN DESCENDING ORDER OF MAGNITUDE OF SUMS OF THE SQUARES OF THE DIFFERENCES IN PERCENTAGES OF WAGE-EARNERS EMPLOYED AND UNEMPLOYED IN EACH AGE GROUP, CANADA, JUNE 1, 1931

Rank	Industry Group	Sum of Squares
1	Electric light and power.....	184
2	Transportation and communication.....	164
3	Agriculture.....	75
4	Finance.....	68
5	Trade.....	62
6	Service.....	37
7	Manufacturing.....	27
8	Construction.....	22
9	Mining.....	18
10	Forestry, fishing, and trapping.....	6
11	Unspecified.....	6

Agriculture seems, as before, to be out of line; otherwise the arrangement fully demonstrates the point previously made.

In similar calculations performed for a number of the finer industry groups of the census the same observation was made, that in general the unemployed on June 1, were most nearly of the age distribution of the employed of their own industry in those cases where unemployment was least.

Unemployment by Occupation and Age.—Following the train of reasoning developed earlier in this chapter on the relation between earnings and unemployment, we have calculated ages of maximum earnings and ages of minimum unemployment for the various occupation groups. These are given, along with the figures on which they are based, in Statements XCVII and XCVIII. The relationship is obvious—plainly those occupations in which the peak of earnings is attained at an early age are those in which the peak of employment is early, and *vice versa*. The zero order correlation between the peaks of unemployment and earnings is .63.

It might be thought that this relationship is due merely to the fact that the maxima of earnings and employment both depend on the age distribution of the several occupations, and that the relationship between them is due to their common base. To ascertain whether or not this is the case we can perform a correlation of each with the median ages of the workers (given in Statement XCIX) in the various occupations, and then partial out the effect of age background. The correlation of age of maximum earnings with median age is .41 and of maximum employment is .03. The partial correlation between ages of maximum earnings and employment turns out to be .68. (Because it behaves erratically in average weeks of employment, agriculture was omitted throughout.)

The fact that this relation between earnings and weeks of work exists, independently of the age bases of the occupations, verifies the point made at the beginning of this chapter, that weeks of employment and earnings are really measures of the same thing—productive capacity of the worker.

XCV.—PERCENTAGE DISTRIBUTION OF MALE WAGE-EARNERS 10 YEARS OF AGE AND OVER AND UNEMPLOYED, BY INDUSTRY AND AGE GROUPS, CANADA, JUNE 1, 1931

Electric Light and Power		Construction		Transportation and Communication		Trade		Finance		Service		Unspecified		Z
Wage-Earners	Unemployed	Wage-Earners	Unemployed	Wage-Earners	Unemployed	Wage-Earners	Unemployed	Wage-Earners	Unemployed	Wage-Earners	Unemployed	Wage-Earners	Unemployed	
p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	
100-00	100-00	100-00	100-00	100-00	100-00	100-00	100-00	100-00	100-00	100-00	100-00	100-00	100-00	1
1-13	1-36	1-70	1-56	1-65	1-89	6-76	6-83	2-53	2-55	2-01	2-01	4-81	4-79	2
3-00	5-62	3-64	3-53	3-30	5-27	7-22	9-31	7-62	8-53	3-23	4-78	6-88	7-47	3
13-63	21-31	12-80	12-31	12-52	19-03	17-70	21-12	20-78	26-27	11-93	15-26	16-60	17-04	4
29-78	31-82	25-98	24-90	27-90	30-83	26-44	22-85	25-24	26-08	24-44	24-30	25-63	25-86	5
28-06	18-80	22-44	20-60	25-80	10-87	20-23	16-10	21-55	10-50	23-95	20-19	17-96	17-33	6
17-22	12-10	19-20	19-81	18-00	13-32	13-72	13-54	13-65	11-69	18-95	17-59	14-54	14-20	7
7-07	6-53	10-04	11-79	8-23	7-08	5-96	7-44	6-16	6-09	10-51	10-33	9-00	8-88	8
1-35	1-70	2-56	3-52	1-42	1-81	1-30	1-91	1-36	1-19	2-94	3-06	2-74	2-73	9
0-78	0-68	1-47	2-01	0-57	0-90	0-72	0-80	1-09	0-80	2-03	1-93	1-84	1-70	10

XCVII.—AVERAGE NUMBER OF WEEKS EMPLOYED OF MALE WAGE-EARNERS 16 YEARS OF AGE AND OVER, BY AGE AND OCCUPATION GROUPS, AND AGE OF MAXIMUM NUMBER OF WEEKS EMPLOYED, CANADA, YEAR ENDED JUNE 1, 1931

Occupation Group	Average Weeks Employed of Age Group									Age of Maximum Employment
	16-17	18-19	20-24	25-34	35-44	45-54	55-64	65-69	70 and over	
All occupations.....	40-21	39-70	40-31	41-19	42-28	41-53	40-05	38-25	38-74	40-92
Agriculture.....	44-97	45-34	44-79	43-27	42-14	41-84	40-75	39-88	40-38	—
Fishing, hunting, and trapping.....	41-79	39-86	40-37	40-01	40-94	40-24	39-05	38-18	38-58	38-20
Logging.....	33-72	33-92	34-60	33-29	34-20	33-14	32-36	32-04	33-35	30-62
Mining, quarrying, oil and salt wells.....	29-38	31-01	33-89	36-23	35-61	34-40	32-59	29-55	29-61	35-12
Manufacturing.....	41-87	40-56	40-39	42-03	42-70	42-26	40-53	38-04	38-24	41-04
Electric light and power.....	38-59	38-65	41-47	43-54	44-03	43-80	42-89	41-38	40-56	41-81
Building and construction.....	40-22	38-01	36-31	37-21	38-05	36-16	33-77	30-60	30-33	38-08
Transportation and communication.....	42-80	39-64	40-01	43-35	46-33	45-96	46-28	44-59	44-45	49-81
Warehousing and storage.....	40-96	43-06	43-63	46-27	47-13	45-69	45-34	46-04	45-01	41-92
Commercial.....	44-93	44-85	45-73	48-03	48-52	47-86	46-45	45-50	46-50	39-26
Finance, insurance.....	—	46-79	46-92	48-95	49-83	49-22	48-52	49-06	49-25	40-95
Service.....	42-77	43-09	45-73	47-65	47-94	47-30	47-05	47-02	47-40	37-60
Clerical.....	47-00	47-42	47-52	48-43	48-82	48-15	47-36	46-73	48-27	38-68
Other.....	30-74	30-02	31-78	32-73	33-89	33-46	32-40	30-60	30-93	42-30

XCVIII—AVERAGE EARNINGS PER WEEK EMPLOYED OF MALE WAGE-EARNERS 10 YEARS OF AGE AND OVER, BY AGE AND OCCUPATION GROUPS, AND AGE OF MAXIMUM EARNINGS, CANADA, YEAR ENDED JUNE 1, 1931

Occupation Group	Average Weekly Earnings of Age Group										Age of Maximum Earnings
	16-17	18-19	20-24	25-34	35-44	45-54	55-64	65-69	70 and over		
	\$	\$	\$	\$	\$	\$	\$	\$	\$		
All occupations.....	7-15	10-20	15-20	21-84	27-68	28-95	26-73	23-49	20-48	48-04	
Agriculture.....	4-10	5-23	6-50	7-98	9-74	10-38	9-64	9-11	7-95	49-71	
Fishing, hunting, and trapping.....	5-57	7-05	9-29	11-77	13-12	13-75	11-84	10-92	8-09	47-48	
Logging.....	7-14	8-75	10-63	13-45	16-20	16-41	15-25	13-33	12-35	46-53	
Mining, quarrying, oil and salt wells.....	12-47	15-92	19-50	23-26	25-32	26-31	24-43	21-31	18-37	48-45	
Manufacturing.....	8-39	11-85	17-84	24-50	29-97	31-89	30-50	29-12	25-21	50-80	
Electric light and power.....	11-38	16-51	21-38	25-70	28-48	29-20	28-42	25-72	24-67	49-73	
Building and construction.....	7-57	12-32	19-15	23-98	26-65	26-95	24-46	21-81	18-32	46-08	
Transportation and communication.....	7-23	11-38	17-10	22-75	28-90	31-95	31-77	28-21	20-53	54-44	
Warehousing and storage.....	9-37	12-81	17-59	23-05	26-68	27-29	25-52	24-01	20-95	47-56	
Commercial.....	8-00	11-36	18-14	28-81	37-46	39-47	35-97	31-61	28-69	48-65	
Finance, insurance,	-	14-73	23-74	39-14	52-43	62-26	59-19	49-67	51-56	52-62	
Service.....	7-23	11-03	18-31	26-17	34-08	35-05	32-79	28-88	25-91	48-00	
Clerical.....	9-65	12-89	18-92	27-00	31-72	31-48	29-81	28-26	25-05	44-52	
Other.....	8-02	10-45	12-94	15-16	16-49	16-60	15-69	14-20	12-60	46-08	

Since occupations are representative of the individual workers (industries offering a cross-section of occupations), and since age is likewise representative of the individual workers, we should expect greater age differences between occupation and occupation, in the distribution of wage-earners, than between industry and industry. As a rough test of this we have calculated the standard deviations of the median ages between the fourteen occupation groups and between the eleven industry groups.

The standard deviation for industries is 2.961, for occupations, 3.433 (Statement XCIX).

In the preceding section considerable stress was laid on differences between the age characteristics of the wage-earners and of the unemployed; the conclusion there drawn being that in general the most highly organized industries show the most difference between working wage-earners and unemployed ones.

Now the question is, how do the occupations behave as to this quality of similarity between wage-earners and unemployed? Do the occupations on the whole behave like the "organized" or like the "unorganized" industries? Unfortunately we can not follow through the detailed procedure of the preceding section for occupations because no tabulation is available in the occupation classification in comparable ages.

We can, however, get an estimate of the age difference between workers and non-workers from median ages. Subtracting the median ages of the wage-earners from those of the unemployed, adding the squares of the differences and averaging, as shown in the calculation below (Statement XCIX), we arrive at 3.27 for the average squared difference for occupations and 5.38 for industries. This is in spite of the fact that, as we have seen above, the age backgrounds of the occupations vary more than those of the industries. We thus find that the occupations are less "organized" than the industries, they seem to exercise less control over their personnel. Making the same comparison by provinces we find the differences less again than for occupation, 1.64 being the average square difference.

Thus as between industries, occupations and provinces, we find that the group employed is most dissimilar to the group unemployed for industries and most similar for provinces. In other words, the selection of the employed wage-earners from the total wage-earners has been done most carefully in industries, less carefully in occupations, and least carefully in provinces.

The inference to be drawn is that it is essentially by industries that the selection of personnel is made—that such differences in "organization" as exist for occupations are the result of a concentration of certain occupations in certain industries which gives the occupational classification an industrial tinge. To a lesser extent the same is true of provinces. To the individual worker the situation is one where he has little trouble becoming a member of an occupation, but great difficulty in becoming attached to one of the more or less organized industries, unless he is of a select type.

XCIX.—MEDIAN AGES OF WAGE-EARNERS AND UNEMPLOYED 10 YEARS OF AGE AND OVER, IN INDUSTRIES, OCCUPATIONS AND PROVINCES, CANADA, JUNE 1, 1931

Industry Group	Median Age			Occupation Group	Median Age			Province	Median Age		
	Wage-Earners	Un-employed	Wage-Earners—Un-employed Col. 1—Col. 2 (3)		Wage-Earners	Un-employed	Wage-Earners—Un-employed Col. 1—Col. 2 (3)		Wage-Earners	Un-employed	Wage-Earners—Un-employed Col. 1—Col. 2 (3)
	(1)	(2)	(3)		(1)	(2)	(3)		(1)	(2)	(3)
All industries.....	34.637	34.106	0.532	All occupations.....	35.640	35.388	0.252				
Agriculture.....	27.430	30.586	-3.147	Agriculture.....	28.660	31.787	-3.127	Prince Edward Island..	31.528	32.321	-0.793
Forestry, fishing, and trapping....	33.358	33.023	0.335	Fishing, hunting, and trapping	35.925	36.552	-0.626	Nova Scotia.....	34.643	33.578	-1.067
Mining, quarrying, oil and salt wells.....	35.326	35.849	-0.523	Logging.....	34.100	34.449	-0.349	New Brunswick.....	33.892	31.260	2.632
Manufacturing.....	35.186	34.376	0.810	Mining, quarrying, oil and salt wells.....	36.246	36.257	-0.011	Quebec.....	33.168	32.027	1.141
Electric light and power.....	35.951	31.821	4.130	Manufacturing.....	35.092	35.828	0.736	Ontario.....	35.235	34.717	0.518
Construction.....	37.586	38.745	-1.159	Electric light and power.....	41.446	41.432	0.014	Manitoba.....	35.335	33.767	1.568
Transportation and communication.....	36.790	32.722	4.068	Building and construction.....	39.964	41.420	-1.456	Saskatchewan.....	32.819	32.191	0.628
Trade.....	31.928	30.572	1.356	Transportation and communication.....	35.995	32.488	3.507	Alberta.....	34.327	34.088	0.239
Finance, insurance.....	32.557	29.851	2.706	Warehousing and storage.....	36.422	33.498	2.924	British Columbia.....	38.680	40.034	-1.354
Service.....	38.500	36.506	1.994	Commercial.....	35.170	32.654	2.516				
Unspecified.....	33.460	33.005	0.455	Finance, insurance.....	39.885	39.302	0.583				
				Service.....	39.125	38.040	1.085				
				Clerical.....	30.027	27.920	2.107				
				Other.....	35.241	34.782	0.459				
Sum.....	378.681				504.309						
Average.....	34.371				36.022						
Sum of squares.....	13,091.485		59.222		18,331.133		45.752				14.775
Average of squares.....	1,190.135		5.384		1,309.367		3.268				1.642
σ^2	8.789				11.783						
σ	2.961				3.433						

Correlations were attempted between various age and employment factors among the major industry groups of the census, but in all cases they failed to be significant, the supposed reason being the heterogeneity of the industry groupings—the manner in which their boundaries cut across the boundaries of a grouping by some natural criterion as, for example, organization* or liability to unemployment itself. There would likewise be little attained in relating factors in the different occupation groups of the census, since these are similar in constitution to the major industry groups.

For a sensitive technique like correlation analysis the best approach is to use the finest available industrial or occupational classification. As an approximation to the comparison of similar groups, a correlation was performed between certain factors relevant to unemployment in 12 railway occupations. "Steam railways" offers the largest number of occupations working under identical industrial conditions of any census industry. All steam railway occupations in which there were more than 1,000 male wage-earners are included in the 12 used. The elements that were correlated between these occupation groups were:—

- (1) average age of wage-earners;
- (2) average age of unemployed;
- (3) average duration of unemployment;
- (4) weeks lost through causes other than "illness", including "no job";
- (5) average earnings per week employed.

Statement C below gives the data used and Statement CI the results of the correlation.

C.—DATA RELATING TO AGE AND UNEMPLOYMENT IN TWELVE STEAM RAILWAY OCCUPATIONS, CANADA, YEAR ENDED JUNE 1, 1931

Occupation	Median Age of		Average Duration of Unemployment	Time Lost Through Causes Other than Illness	Average Earnings per Week Employed
	Total Wage-Earners	Unemployed			
	(1) years	(2) years	(3) weeks	(4) weeks	(5) \$
Officers.....	48-674	47-727	13-545	0-244	73-83
Foremen, inspectors.....	46-926	46-604	13-170	1-682	34-85
Agents—ticket and station.....	41-109	32-043	19-470	1-311	37-61
Baggagemen and expressmen.....	43-384	39-222	15-933	2-580	30-64
Brakemen.....	37-560	35-999	22-029	9-940	32-09
Locomotive engineers.....	47-048	45-286	16-485	3-388	45-87
Porters.....	36-107	35-025	23-024	10-962	32-05
Conductors.....	38-932	36-818	20-074	5-430	20-05
Section foremen, sectionmen; trackmen.....	48-114	46-986	13-812	1-932	43-37
Switchmen, signalmen, and flagmen.....	37-827	35-662	21-999	7-874	19-33
Yardmen, n.e.s.....	40-978	38-117	21-059	7-274	27-52
	39-405	37-139	16-721	5-469	27-37

CI.—CORRELATION OF FIVE FACTORS RELATING TO AGE AND UNEMPLOYMENT IN TWELVE STEAM RAILWAY OCCUPATIONS, CANADA, YEAR ENDED JUNE 1, 1931

Item	Coefficient of Correlation of				
	Median Age of		Average Duration of Unemployment	Weeks Lost Through Causes Other than Illness	Average Earnings per Week Employed
	Total Wage-Earners	Unemployed			
Median age of (total wage-earners.....)	1-00	0-91	—0-90	—0-84	0-73
Median age of (unemployed.....)		1-00	—0-84	—0-50	0-66
Average duration of unemployment.....			1-00	0-86	—0-60
Weeks lost through causes other than illness.....				1-00	—0-58
Average earnings per week employed.....					1-00

There is a high negative correlation between the average unemployment and the average age of the wage-earners, i.e., the older the average age of an occupation group the shorter the average unemployment for that group (factors 1 and 4). Elsewhere in this chapter it has been pointed out that the greater the age of an individual wage-earner the longer his probable unemployment. The apparent contradiction between these two statements is resolved when we consider that the occupation groups are not random with regard to age, but that the groups

*In the special sense in which this is used throughout the monograph.

of higher average age represent types of occupation different from those of lower average age. The executive and more responsible supervisory jobs tend to be held by older people; when the correlation is performed by occupation groups and not by individual persons, as here, the manner in which persons are selected for occupations will affect the result.

It will be seen from the similarity of the first two rows of Statement CI that a similar result is given for the relation of the average age of the wage-earners as for the average age of the unemployed to the various factors considered.

This bears out the point that, for a given industry, the unemployed of various occupations seem to behave very much as the wage-earners of their occupations; indicating that it is between industries as wholes that the sharp cleavage exists between wage-earners and unemployed.

Unemployment by Age in Previous Censuses.—Questions relating to unemployment have been asked in the Censuses of both 1911 and 1921. Unfortunately for a comparison or determination of time trend the results have not been tabulated in the same age groups. Further the definition of unemployment as "time not employed in usual occupation" adopted in 1911 makes the absolute figures of unemployment for that year an over-statement in comparison with 1921 and 1931; it is believed, however, that the rougher age-to-age differences in the two years can be compared. The figures of employment are as follows:—

CII.—AVERAGE WEEKS EMPLOYED OF WAGE-EARNERS, BY AGE GROUP AND SEX, CANADA, YEARS ENDED JUNE 1, 1911-1931

Age Group	Average Weeks Employed in 1911		Age Group	Average Weeks Employed in 1921		Age Group	Average Weeks Employed in 1931	
	Males	Females		Males	Females		Males	Females
All ages.....	41-40	41-38	All ages.....	46-46	48-27	All ages.....	41-07	46-59
15-24.....	40-79	41-38	10-14.....	45-72	44-97	10-15.....	42-50	44-01
			15-19.....	45-73	46-98	16-17.....	40-21	42-99
			20-24.....	46-12	48-73	18-19.....	39-70	44-95
						20-24.....	40-31	46-94
			25-49.....	46-86	48-86	25-34.....	41-19	47-70
25-64.....	41-75	41-43	50-64.....	46-00	48-70	35-44.....	42-28	47-48
						45-64.....	41-33	47-23
			65 and over..	44-81	49-08	55-64.....	40-05	46-98
						65-69.....	38-25	46-57
65 and over..	39-17	40-60				70 and over	38-74	48-57

The general parallelism of the three sets of figures is apparent.

Summary.—1. In the course of this chapter we have noted the parallelism of earnings and employment at different ages, and concluded, from this and from theoretical considerations, that they are both representative of the rise and decline of productive efficiency from youth to old age.

2. We have noticed, as an apparent exception to the above, that very young persons and very old ones have less unemployment than we should expect from the relative lowness of their earnings. This was explained as partly due to a selection, whereby those persons not actually employed at the time of the census tend to report themselves to the enumerator as not in the wage-earner class. This is especially true of married women.

3. That this is not the only factor at work, however, is clearly shown in the separation of unemployment, by a necessarily somewhat devious method, into the two categories of frequency and duration. Frequency of unemployment may be regarded as the answer to the question, "What is the chance of a wage-earner now working losing his job?"; duration as the answer to the opposite question, "What is the chance of a wage-earner now out of work finding a job?"—more precisely "How long on the average will he be idle?" We found that both frequency and duration are low in middle life and rise toward the older and younger ages; at the very young and very old ages, however, it was plain from charting of the figures that duration continues to rise though frequency drops sharply; in short, boys and old men are more secure in their jobs, once they are employed, but once out they have a far harder time getting in again than the more favoured ages.

4. As between a number of similar industries there seems to be a tendency for seniority to appear most strongly in those where establishments are largest; this is indicated by the decreasing percentages of unemployment at older ages in such industries.

5. The very force that would do most to develop Canada, given suitable economic conditions, *viz.*, the high ratio of persons of producing age to consumers, was a handicap under the unfavourable conditions of 1931, intensifying the competition for such jobs as were available. As this abnormality of age structure vanishes in the natural course of demographic evolution, Canada's position will improve.

6. The variation in unemployment between provinces was found to increase towards the older and younger ages. This is partly at least because 25 is the age of greatest mobility; a differential shortage of jobs suitable for persons of an age of great mobility will be more nearly ironed out by the movement of wage-earners than differences at ages when moving is less practicable.

7. A certain degree of success was attained in fitting a truncated normal to the very rough distribution of wage-earners by weeks lost, in that the progression of modal points and standard deviations was extremely smooth from age to age. The truncated normal, involving only three constants of fit, gave a very much better fit than could be expected with four or even five constants in a parabolic curve.

It seemed that where unemployment was what we might call "normal", about 30 p.c., the Gaussian curve represents the entire wage-earning population and shows them normally distributed, all liable to unemployment but in varying degrees, from the man most secure in his job to the one who lost the whole year. The unemployment of the former is to be considered negative, of course. But where unemployment becomes more severe a hard core develops; a rising concentration sets in as evidenced by the narrowing of the standard deviation about the mode; the diverse causes and conditions which act where unemployment is of "normal" amount only, become narrowed down to a single, definite, widespread and uniformly-acting cause; a cause which tends to operate on all of the unemployed alike. Its characteristic is that it acts from a definite centre, and draws all those wage-earners of the group who lose any time at all within a narrow interval in respect of the number of weeks they lose. In the very old and very young age groups, therefore, we have a situation where those who happen to lose no time seem in no danger of losing time, while those who do lose suffer lengthily but relatively definite stretches, after which they either find a job or give up the search and are considered unemployable.

8. Comparing the age incidence of the various causes of unemployment we found that "no job" follows "all causes", running inversely to earnings; while "temporary lay-off", "strike or lockout", and to a lesser extent "accident" correspond directly to earnings as is to be expected from the fact that those exposed are persons recently at work. Illness rises steadily throughout life as a cause of unemployment—which steady rise corresponds to the claim rates for disability experienced by insurance companies.

9. It was shown numerically that in industries of high organization there is a great dissimilarity of age structure between the wage-earners working and those unemployed; in those of poor organization the two classes are very much alike. When unemployment is low (as it is in industries of high organization) there seems to be the very definite distinction between those working and those not working—the latter seem almost an outcast class; in industries of high unemployment, on the other hand, there is a constant movement of persons from employed to unemployed and back again, so that the two groups at any moment are of similar structure.

Looking at the matter from a slightly different viewpoint, we may regard the people actually working as a group selected from the larger aggregate of total wage-earners. Then our previous statements are the same as saying that the working group are more carefully and permanently selected in the well organized than in the poorly organized industries, in favourably situated industries than in unfavourably situated ones.

CHAPTER VI

THE TREND OF UNEMPLOYMENT

INTRODUCTION

The following study of the trend of unemployment is practically confined to calculations of unemployment month by month since June, 1920. The task of making such calculations, especially for the period following the Census of 1931, is not only great but perilous. It is a fact, however, that no worthwhile constructive work has ever been accomplished without tackling such difficulties and the pressing need for some quantitative guide to current unemployment conditions justifies the risk of an estimate.

While the figures herein are only estimates, every care has been taken in their construction and in checking them against known facts and even theories—as will be seen by reading the description of the methods used. They must not, however, be accepted as taking the place of sampling in the field, much less a census. They are rough guides, reflecting the trend of the known facts bearing upon unemployment—but they remain only estimates.

Even a census of unemployment, it may be remarked, does not give exact results, and this would still be true even if the census enumerator failed in no instance to follow instructions. The multiplicity of definitions stands in the way of any clear or exact concept of unemployment. To some the unemployed person is any person not working, whether he ever worked before or not, or whether or not he is able to or wants to work. In the following estimates the definition of unemployment is rigid and must be constantly kept in mind as it is absolutely necessary to know what we mean. *The unemployed person, in the following estimate, is the person who could tell a census enumerator that he had worked as a wage-earner or that he had a wage-earning occupation, but is at present out of work (not through illness, accident, strike or lockout, etc.).*

It is clear that this definition of unemployment excludes the boy or girl of working age who has never worked at a steady job; also the boys or girls on the farm who would be wage-earners under better employment conditions. The former no doubt constitutes a very serious problem, but to consider him unemployed would destroy any attempt at giving a clear concept of unemployment in the present sense. He should be considered as a separate problem, but to add him to the unemployed when conditions are bad and forget that in many cases he was not looking for employment when conditions were good, would give a distorted picture of conditions.

In Tables 1 and 2 (Part II) the estimates of unemployment are given under several forms to meet different persons' conceptions or definitions of unemployment. The first column (Table 1), which shows the percentage *employed* in index form, is considered the soundest of the columns; in other words, placing them thus in index form suggests to the reader that their legitimate use is as a barometer. There follows estimates of percentages employed, number of wage-earners, number unemployed, etc. One of the columns shows the number normally gainfully occupied (as distinguished from wage-earners) and another the number of wage-earning jobs per person gainfully occupied. This in itself is a barometric figure and meets certain persons' definitions of employment. There is also an attempt in Tables 3 and 4 to show the number remaining in rural parts during the depression period and the changing gap between the number of wage-earners and the totality of gainfully occupied. The latter include not only wage-earners but employers, independent workers and "no pay" workers such as farmers' sons, etc.

There are certain concepts given by the figures of these estimates that may be new to the reader. One is that the proportion of wage-earners to independent workers changes with employment conditions. When conditions are good the person is apt to rush to wage-earning jobs; when bad to go back. One very striking illustration of this is furnished by the Censuses of 1921 and

1931, not by these estimates. In 1921 wage-earners formed 62.1 p.c. of the gainfully occupied; in 1931 they formed 65.4 and probably all of this increase (or more) took place in 1926-29. Such experience as this makes it obvious that an estimate of unemployment in Canada or any other country that is in process of becoming industrialized is much more difficult than in older countries which have completed this process. In 1921 the percentage unemployed of the wage-earners in Canada was about 9. Had the country been industrialized in 1931 only to the extent that it was in 1921, the number of jobs had increased by 1931 sufficiently to keep 87.3 p.c. at work, leaving 12.7 p.c. unemployed. Owing to the increased industrialization (65.4 instead of 62.1) there were 17.0 p.c. unemployed in 1931. Another way of looking at it is that in the ten years the jobs increased a little faster than the population; but the wage-earner, or the person at risk increased one and one-third times as fast. According to the increase in proportion of wage-earners in 1926-29 every gainfully occupied person would be a wage-earner in twenty-five years—an inconceivable situation.

It has already been pointed out that an estimate of this kind does not take the place of a sample in the field. In a study of the census of unemployment (Chapter I), a reasonable method for taking such a sample is suggested. It was discovered that places of roughly the same size when fully enumerated have on the aggregate the same unemployment as the whole of Canada. Several such size groups are shown, but of course the smaller the place the easier it is to sample. Consequently 138 towns were selected and examined for unemployment and industrial structure with a view to investigating their "sampleability". They seem quite satisfactory, and are so small that any official could tell how many persons are unemployed. Of course, larger places may be taken instead, the principle being what is important, *viz., that it is better to procure a complete sample of places of the same size than an equally large sample of places of different sizes.* This refers to sampling for total unemployment.

When it comes to sampling for unemployment in industries, it was discovered that the middle-sized industry seemed to be the best basis. The larger industries tended to show slightly more and the smaller slightly less than the average unemployment. Consequently the principle of sampling for unemployment in industries was to take a complete sample of industries of a certain medium size. Such a selection could easily be made from the firms reporting. A periodical questionnaire to these firms as to the number of unemployed would be expected to procure a representative sample.

The method of estimating the employment and unemployment is given in detail later in the chapter and a full set of the tables used as basic material is added in Part II (Tables 1-15). It may be advisable to give a brief summary of the method in this introduction.

Summary of Method.—Four sets of independent data were used.

1. The labour union figures of members and persons unemployed from May 31, 1920, to the present time were corrected for obvious defects and other defects demonstrated by analysis. As thus corrected the percentages unemployed agreed with the census figures of June 1, 1921 and 1931. In estimating the employment and unemployment since 1931 these figures in index form were taken as the upper limit of percentages employed.

2. The population of 1931 was projected by age groups to the present time by means of a life table and the number normally gainfully occupied from month to month was calculated from this, using as a base the percentages gainfully occupied (as distinguished from wage-earners) in 1931 by ages. It is conceded not only from experiences in Canada but also by authorities in other countries that these percentages are normally either constant or subject to very slight fluctuations and probably constant as regards trend.

3. The Dominion Bureau of Statistics' index of employment based upon the monthly reports of firms was regarded as a reliable index of persons employed. Using the census of persons employed in 1931 as a base and deducting teachers and Federal Government employees (figures currently available) the index was used to project the number employed month by month (less these deductions) to the present time. To these figures were then added the teachers and Government employees for an estimate of the number employed.

4. The index of the number normally gainfully occupied as in § 2 was divided into the index of persons employed to answer the question "*How many wage-earning jobs are available per person normally gainfully occupied?*" This figure is regarded as reliable and in itself forms a barometer of employment to meet some definitions (see Table 1). This index was used as a lower limit to employment since 1931.

5. The two limits are shown in Chart 15. Although obtained independently they showed a correlation for two consecutive periods of '98 and '93. The *estimate of employment* was calculated on the basis of these two limits, the corrected labour union figures being used to give "body" or dimension to the estimate, and the jobs per gainfully occupied to control the movements.

Tables 3, 4 and 5 were used as checks. Table 5 shows the movement of population between 1921 and 1931 making it clear that there was a large exodus not only of wage-earners, but of population from 1921 to 1926 and a subsequent inrush. Tables 3 and 4 deal entirely with the estimate from 1931 to the present. It goes counter to the reasoning of many that the wage-earners should be shown to decrease from 1931 to the low point of the depression in March, 1933, and that subsequently, when employment was on the up-grade, the *unemployed* were not reduced *pari passu*. But it may be mentioned that even at the best of times there is a considerable gap between *wage-earners*, who alone are subject to risk of *unemployment*, and all gainfully occupied, and a much larger gap between this and the population. As the wage-earning jobs decrease the wage-earners may be decreased in many ways—by wage-earners transferring to the class of independent workers, etc., but principally by young persons on coming of age failing to become wage-earners. Tables 3 and 4 show these principal constituents. They are largely in rural communities. Under normal conditions they would move into city or other wage-earning jobs. Under depression conditions they probably remain at home as "no pay" workers displacing paid agricultural labourers. There are also "no pay" gainfully occupied in cities (working for parents) and no doubt a considerable number of young persons would be added to these during the depression. Tables 3 and 4 attempt to calculate their number. They are shown to be large enough to account almost entirely for the decrease in the wage-earners from May 31, 1931, to March 31, 1933. Of course, in addition to these there would probably be an exodus from wage-earners to independent workers on the part of older wage-earners leaving the city for the farm, lodging-house keeping, etc. There is really no contradiction in a decrease in wage-earners with decrease in employment.

If anyone wishes to add these "no pay" workers to the number unemployed he can find material in Tables 1-4 to do so. It is not suggested here that this be done. The figures are given only as checks and for information. They also make it clear that when the tide turned, the unemployed were not reduced *pari passu* with the increase in wage-earning jobs. As these jobs increased the unemployed had as competitors these persons who had left the ranks of wage-earners. As a concept figure it may be mentioned that at the bottom of the depression (March, 1933) the number of unemployed wage-earners was estimated at 708,000 and the decrease in wage-earners from May, 1931, at 243,000.

The situation as estimated from May 31, 1921, to June 30, 1936, is shown in Chart 12 following.

Table 1 is the estimate of employment and unemployment for the period following the Census of 1931. This, of course, is a matter of post-censal estimate and must be considered a different problem from an inter-censal estimate, partly because it has only one known boundary for checking purposes and partly because we have to look forward to the necessity of keeping it up to date. The background to employment figures in this table are the independent and "no pay" workers who must always be kept in mind when visualizing the employment situation.

Table 2 is inter-censal material involving less difficulty in estimating since we have two boundaries as checks. As these estimates coincide with the census for these two boundaries without being forced to do so, it is reasonable to believe that they express the situation for the remainder of the period.

Tables 3, 4 and 5 are composed entirely of subsidiary material showing the population background of the employment situation.

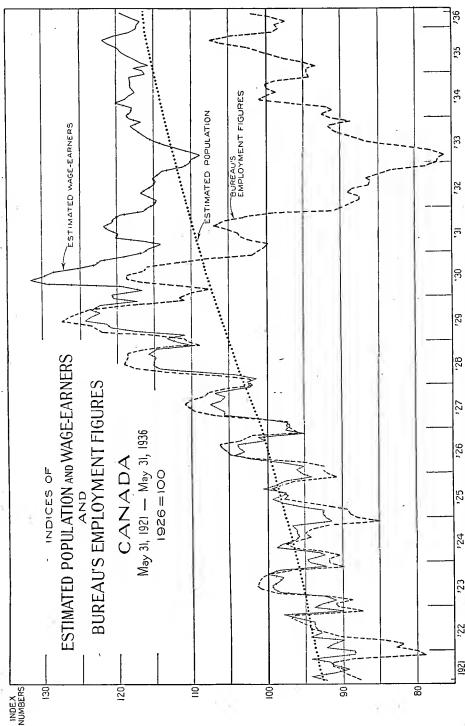


Chart 12

Difficulties Besetting an Estimate of Unemployment.—To estimate unemployment is an even more difficult task in Canada than in other countries, and this, it must be admitted, is saying a great deal. The reason why it is so difficult—and of this excessive difficulty there is no doubt—is the complexity added to the problem by the fact that a country in process of becoming industrialized is subject to violent transitions between the wage-earner and the independent worker classes. In 1921, Canada had 62.1 p.c. of her gainfully occupied population in the wage-earning class; in 1931 she had 65.4 p.c. in this class. In other words her industrialization increased 5.3 p.c. in the decade and there is not the slightest doubt that most of this increase took place between 1926 and 1929. Now it is reasonable to expect that if a sudden expansion in employment could produce a sudden increase in industrialization; a continued depression will have the opposite effect.

To use the census figures, in 1921 Canada had 3,173,000 gainfully occupied, increasing to 3,927,000 in 1931, i.e., 23.8 p.c. The number with wage-earning jobs increased from 1,789,000 in 1921 to 2,133,000 in 1931, i.e., 19.2 p.c. If Canada in 1931 had the same proportion of wage-earners to her gainfully occupied population as in 1921 (*viz.*, 62.1 p.c.) she would have had 2,439,000 wage-earners to 2,133,000 wage-earning jobs in 1931, leaving 306,000 or 12.5 p.c. without jobs. Instead of this she had 2,570,000 wage-earners to these jobs, leaving 437,000 or 17 p.c. without jobs. This means that 131,000 persons, or 5.1 p.c. of all the wage-earners, were jobless due to the increased industrialization in the decade. The error in an estimate of unemployment in 1931 on the basis of the 1921 industrialization would have been this 5.1 p.c., or in absolute numbers 131,000, too low, i.e., it would have been useless.

To use another illustration, in December, 1935, we had about 4,261,000 normally gainfully occupied persons. This is very nearly a correct figure. We had 2,041,000 wage-earning jobs—also a close figure as we have a good index of employment from the monthly reports of firms. Now if the December, 1935 industrialization of Canada had been the same as in 1921, there would have been 2,646,000 wage-earners, leaving 605,000 or 22.9 p.c. without jobs; if the same as in 1931, there would have been 2,787,000 wage-earners leaving 746,000 or 26.84 p.c. without jobs. The truth probably lies close to our estimate of 500,000 without jobs. If industrialization is a process like other forms of growth, we expect it to be more or less gradual, woven into the population. It is incredible that something that happened in three years (1926-29) owing to a more or less artificial stimulus should be woven into our population. Emphatically it must be stated that the change in industrialization from 62.1 p.c. in 1921 to 65.4 p.c. in 1931 was the work of the years 1926-29. From evidence submitted in Table 5, that wage-earners left in hundreds of thousands for the United States, it can be concluded that between 1921 and 1926 industrialization, instead of mounting, actually declined. No doubt many others left the class of wage-earners to become once more independent workers and, still more important, some hundreds of thousands of boys who would have left the farm for the city at a time of industrial expansion would stay on the farm in times of depression. Consequently, the mounting to 65.4 p.c. by 1931 was not from a low point 62.1 in 1921 but from a lower point sometime around 1926 to a higher point than 65.4 in 1929—let us say from 60 p.c. to 70 p.c., an increase of 10 p.c. in three years or about 3 p.c. a year. If this was a permanent process in Canada in these three years, what was happening in all the last hundred years before 1921 when it grew only up to 62.1 p.c. industrialization? And what has happened in old countries with hundreds of years of industrialization? Great Britain (according to Woytinsky), between 1861 and 1911 only changed from 56.8 to 59.5 p.c. in industries of the gainfully occupied. Evidently the process is a slow one, and when we see it increasing as it did in Canada in the last decade, we are justified in feeling that it is not likely to remain at the 1931 high point of 65.4.

In a country like Canada where industrialization is thus subject to violent changes, it is obviously very difficult to make an estimate of unemployment—much more difficult than in countries where industries are stabilized. In such countries estimates can be fairly safely made inductively. For example (to use the illustration we have just given), since we are reasonably sure that the gainfully occupied have increased from 3,927,000 in 1931 to 4,261,000 at the end of 1935, that wage-earning jobs have changed from 2,133,000 to 2,041,000 in the meantime

and that the percentage of the gainfully occupied who were wage-earners in 1931 was 65.4, in a country where industries were stabilized we could fairly safely say that the present number of wage-earners was 2,787,000, the number without jobs 746,000 and the percentage unemployed 26.8. It is clear that we in Canada can not safely make this estimate. There is little doubt that this inductive method of building up an estimate would be the best if possible, but it should be obvious from the above facts that it is not possible.

Results and Weakness of Inductive Method.—Can we still adhere to the purely inductive method and say that we can calculate from the age distribution of 1931 how many at gainfully occupied ages are at present rural and assume that these have remained rural since 1931? Such an estimate would give us (at wage-earning ages) June 1, 1935, 3,982,000 rural out of a total of 8,759,000. Now calculating this rural population according to the percentage at each age that would normally be gainfully occupied if they had moved into cities at their usual rate, i.e., calculating the gainfully occupied of these rural persons according to the percentage normally gainfully occupied in the total population instead of the rural population, we have 1,950,000 of these gainfully occupied. We might use these figures with certain other estimates in connection with agriculture as a means of estimating the present number of wage-earners inductively, but this method fails to take into account the number of persons who return to the country from the cities and a much larger group of young persons in the city who arrived at wage-earning ages but have not yet connected with a job. In addition, it would break down later when good times returned and these rural persons began flocking once more to cities. All this is merely to show that there are too many unknowns to build up an estimate by this method. We are fairly certain that all these things are happening, but to put these happenings in figures is a different thing. The historian can philosophize about these happenings, but the statistician must answer not only the question "What is happening?" but also the question "To what extent is it happening?" Now there is danger that even when this philosophy is being translated into figures, the figures are based upon the experience in the philosopher's country, probably an old country with stabilized industries. The difference between these figures and what they would be if based upon the experience of newer countries mounts into staggering figures—as did the difference between 605,000 and 746,000 persons without jobs as estimated for December, 1935, according to the industrialization of 1921 and 1931—in other words, the difference between an estimate safe for an old country and a reasonable estimate for a country in process of becoming industrialized. We submit that an error of 141,000 in an estimate of jobless persons renders such an estimate useless.

On the other hand, can we attack the problem by a deductive method, i.e., by means of curves or mathematical calculations? There are a good many correlations discoverable in such data as we have on employment, population, etc., and it is very tempting to try projections on the basis of such correlations. Now, even if we could discover a law governing unemployment acting either constantly or changing in a definite manner, it could not be safely applied in projection owing to mechanical difficulties arising out of the irregularities in the figures. No one knows better than the statistician that calculations based upon mathematical curves are extremely dangerous; but while he concedes that the results are only approximations at best, if he commits himself to such a curve he must apply it consistently; if he changes it arbitrarily according to circumstances, he no longer knows by what laws he is going. A calculation over a series of years or months may be completely thrown out by a few extreme figures at the end. His calculation according to such a curve may be very good for the intervening months but a projection may lead to all kinds of absurdities. Thus the best mathematical expression of what happened between 1921 and 1931 might lead to the worst absurdities if projected beyond 1931. Take for example a gradation of the industrialization of Canada from 62.1 in 1921 to 65.4 in 1931. If industrialization had continued at this rate it would have reached 67.1 p.c. by May 31, 1936, and the resulting figures would be 2,859,000 wage-earners with 758,000 jobless. The point of the illustration is this: there is no doubt that if we knew the true process of industrialization we could easily estimate the unemployment. However, even if we knew the actual process, month by month, from 1921 to 1931 and attempted to measure the true process by a mathematical curve, our calculations would have been thrown out, for prediction purposes, by the fact that the industrialization decreased from 1921 to 1926 and then increased violently from 1926 to 1929—instead of increasing steadily or fluctuating over the whole period.

METHOD ADOPTED

Now the method actually followed was neither purely inductive nor yet deductive but a combination of both, leaning to the inductive as much as possible. When making use of deduction the following principles were laid down and strictly adhered to:—

1. Any inmathematical calculation was so simple that it would be done by a high school pupil.

2. When any use was made of a smooth curve fitted by least squares to describe a process constantly changing its rate, non-linear equations were avoided. Processes were measured only over short periods, taking into account (in determining the length of the periods) the trend upward or downward, as shown by the crude figures on a chart. The rates of change were then graduated. This is not mathematical any more than smoothing by moving averages is mathematical.

3. No reliance whatever was placed upon projections by mathematical measurements. In the few cases where they were used, they were confined to interpolations.

The reasons for thus avoiding mathematical calculations have already been given. Already we had an estimate of unemployment obtained largely by means of such calculations. This estimate agrees well with that given in Table 1 but the method of arriving at it was so complicated that it was not deemed desirable to issue the results as official estimates. To the inherent difficulties of the task of estimating unemployment was added the demand that the method used should be intelligible to the layman. In the mind of the average person is a very reasonable suspicion of results arrived at by processes he can not understand. The method actually used was intended to meet this situation. Figures purely inductive were also calculated but used only as checks.

Definition.—Before describing the method actually used, one point must be emphasized, that is the point of definition of unemployment. According to census usage and also that of unemployment insurance schemes, a person to be unemployed must be a wage-earner. *The person who, at a census, can say that he has a gainful occupation and is not an independent worker, employer, or "no pay" worker is a wage-earner. If this person is out of a job or temporarily laid off he is considered "unemployed".* Clearly this definition does not include boys or other persons who have never worked at a regular job or are unable to work. The fact that they are not working constitutes a serious problem but to confound them with the unemployed upsets all calculations. Their numbers are roughly calculated and shown in Table 1, but according to our definition they are not "unemployed".

THE BASIC MATERIALS USED

1. **Monthly Reports from Firms.**—The Dominion Bureau of Statistics receives monthly reports from industrial firms. From these reports is compiled an index of employment which we find withstands severe tests and is considered good. From this index and the bases of the Censuses of 1921 and 1931 the number of persons employed from month to month was calculated with the understanding that the reports are a representative sample. An adjustment for the months of June, 1931 to June, 1934 was made by using the number reported by firms as employed for each month, increasing it by the index and adding the number of teachers and government employees which remained fairly constant.

2. **Population of Working Age.**—The number of persons, by single years of age, in 1931 was projected by means of a life table to obtain an estimate of the persons of working age subsequent to 1931. The results are shown by age groups in Table 6. This is considered sufficiently reliable owing to the ascertained fact that the number of immigrants is being practically balanced recently by the emigrants. Although the projection is thrown forward to 1941 for the convenience of the reader, it is clear that corrections will have to be made once the number of immigrants increases or once employment conditions improve in the United States and elsewhere and the doors are again thrown open to emigrants from Canada.

3. **Constant Proportion in Gainful Occupations.**—In accordance with our past history and with the experience of other countries, the proportion of the population in gainful occupations, when age is taken into consideration, is remaining fairly constant. Use was made of this principle in calculating the number normally gainfully occupied since 1931 by taking

the percentage in the various age groups as obtained in 1931. The results are shown by sex in Table 7. This figure is likewise regarded as sufficiently reliable. It is also shown in Table 1 (scaled from month to month).

4. Wage-Earning Jobs per Normally Gainfully Occupied.—The yearly figure of gainfully occupied (as distinguished from wage-earners) was then scaled from month to month (arithmetically) and divided into the index of employment. This answers the question "How many wage-earning jobs are there per normally gainfully occupied person?" In addition to the wage-earning jobs, these persons have independent work such as farming, etc. This, in index form, is a barometer in itself and indeed meets the average person's conception of employment. It is shown since 1931 in Table 1.

5. Rural Population of Working Age.—As a check to the calculation and as a matter of information for the reader, the same calculation as in §2 was made for the rural population. This is shown by age groups in Table 8.

6. Numbers of Rural Population Forced to Remain on Farms by the Depression.—This rural population was then given the same distribution by gainful occupation and age as obtained for all persons in 1931 on the assumption that if the depression had not existed these persons would have continued to drift into city occupations. The results give an idea of the number of persons who probably were forced to stay on farms, etc., by the depression. They are not used in the calculation of unemployment. Their figures are shown in Tables 9-11, and also (scaled from month to month) in Table 3.

This series forms one set of the basic figures. We now turn to another set, *viz.*, reports from labour unions.

7. Labour Union Reports.—One mathematical principle to which this task felt itself committed is the constancy of large numbers. The labour union registered membership is something like 300,000 or about one-eighth of our wage-earning population. Where a sample as large as this is obtainable it is reasonable to expect that by the very weight of numbers it should tell us something about unemployment. The objection that the organization of labour unions brings about employment conditions different from those prevailing among the generality of wage-earners is here regarded as frivolous. If we could obtain an estimate of unemployment as close to the truth as the difference caused by labour union organization we should have not only the best estimate in the world, but also figures better than those of any census, since definitions of employment are subject to very wide variations. This is not the trouble with the labour union figures. The real drawback is that from month to month the number of unions reporting their unemployment varies, and more particularly that the sample reporting varies in kind according to employment conditions. When employment is on the up-grade the reports of the unions seem to be fairly representative; when it is on the down-grade there is a clearly marked tendency for the reporting unions to have better employment conditions than the non-reporting unions. We have to prove this, but in the meantime it may be stated, for the information of the reader, that an assemblage of the following data from the *Labour Gazette* since June 30, 1920, was made, pertaining not only to labour unions, but also to employment conditions. These facts are shown in Table 12. The other conditions mentioned were reports of employment agencies. They are thrown in to complete the picture of the conditions prevailing over the fifteen-year period. They are not used in the calculation, but were used in a previous calculation of unemployment already referred to and described as too complicated to be acceptable to the general public. The facts given for labour unions in Table 12 are: (1) number of registered members (reported for years only but scaled arithmetically from month to month); (2) number of unions reporting; (3) number of members reporting; (4) number of reporting members unemployed (not counting those ill, on strike, etc.), and (5) percentage unemployed. To this is added (6) percentage reporting of the registered members which we shall from time to time refer to as "per cent sample."

It will now be necessary to examine these labour union figures. If they were reliable, we would need no other estimate of unemployment, because most certainly the sample is large enough. However, it may be possible to render them more reliable.

(1) *Unemployment Decreases with Membership.*—The membership is illustrated in Chart 13. This refers to the registered membership, not the membership reporting. It will be seen that

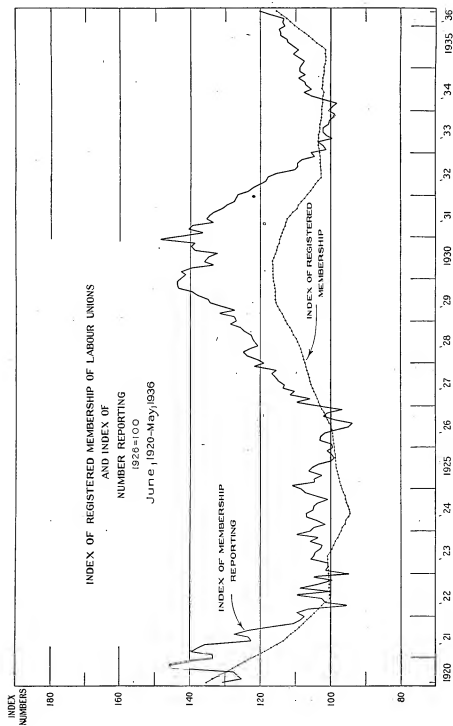


Chart 13

it also drops with depression in employment. It will also be shown that as it drops, the unemployment percentage decreases showing that the persons dropping out of the unions are more apt to be unemployed than those remaining.

(2) *Correlation of Indices of Membership Employed and Reporting and Per Cent Sample.*—An attempt will now be made to show that the percentage unemployed is affected by the per cent sample. To ascertain this, a calculation was made from June, 1920, to June, 1934, dividing the period into seven periods of 25 months each. The three sets of figures, as in Table 13, are (1) index of membership employed; (2) index of membership reporting and (3) percentage of membership reporting, i.e., per cent sample. These three sets were correlated merely for the purpose of examining their behaviour. If x_1 = deviation from mean of membership employed; x_2 = deviation from mean of membership reporting, and x_3 = deviation from mean of per cent sample, we have the following seven sets of equations.

1. $x_1 = 1.1609 x_2 - 1.4172 x_3$	$r = .95$	June, 1920–June, 1922
2. $x_1 = 1.6438 x_2 - 0.8725 x_3$	$r = .92$	" 1922 " 1924
3. $x_1 = 0.5064 x_2 + 0.2375 x_3$	$r = .75$	" 1924 " 1926
4. $x_1 = 2.2647 x_2 - 3.7727 x_3$	$r = .99$	" 1926 " 1928
5. $x_1 = 0.3722 x_2 + 0.6994 x_3$	$r = .80$	" 1928 " 1930
6. $x_1 = 2.1221 x_2 - 3.7868 x_3$	$r = .99$	" 1930 " 1932
7. $x_1 = 5.6753 x_2 - 9.1364 x_3$	$r = .80$	" 1932 " 1934

(3) *Correlation of Percentage Employed and Per Cent Sample.*—In the next instance the period from June, 1920 to June, 1934 was divided into six periods according to the falling and rising trends shown in Chart 14 and two sets of figures were taken, viz., (1) percentage employed and (2) per cent sample. Both of these were first corrected for trend. The figures thus corrected were then correlated and the results are shown as follows: (x_1 = percentage employed; x_2 = per cent sample).

1. $x_1 = -0.63 x_2$	$r = -.62$	June, 1920–Feb., 1922
2. $x_1 = -0.03 x_2$	$r = -.04$	Feb., 1922–Aug., 1926
3. $x_1 = -0.49 x_2$	$r = -.38$	Aug., 1926–Dec., 1929
4. $x_1 = -0.71 x_2$	$r = -.81$	Dec., 1929–Dec., 1930
5. $x_1 = -0.27 x_2$	$r = -.30$	Dec., 1930–Feb., 1933
6. $x_1 = -0.19 x_2$	$r = -.23$	Feb., 1933–Dec., 1935

It is thus seen that in every case the percentage employed varies inversely as the per cent sample. Now there is no logical reason why this should happen except that those employed were more likely to report than those unemployed. It is also noticeable that little or no correlation is shown during normal periods of employment.

(4) *Inductive Method Applied to Labour Union Data.*—Before attempting any correction on the basis of these findings, an attempt was made to use the labour union figures inductively. On May 31, 1921 the percentage unemployed in labour unions was 15.5; in the census (June 1) about 9 (the percentage not working was 9.8 but this included those not working on account of illness, etc.). In 1931 the labour unions reported 16.2 unemployed, the census 17.0. If these discrepancies could be reconciled inductively it was considered that a basis of estimate was reached. In 1931 the labour union and the census figures, industry group for group, compare as follows:—

CHIL.—COMPARISON OF LABOUR UNION REPORTS WITH CENSUS REPORTS OF UNEMPLOYMENT, BY INDUSTRY GROUPS, CANADA, JUNE 1 (MAY 31 IN THE CASE OF LABOUR UNIONS), 1931

Industry Group	Labour Unions		P.C. Un- employed	Census	
	No. Reporting			Wage- Earners	P.C. Un- employed
	Unions	Members			
TOTAL.....	1,808	198,059	16.2	2,570,007	17.0
Manufacturing.....	488	57,745	17.9	606,617	15.5
Coal mining.....	45	16,639	12.8	31,296	39.9
Building and construction.....	253	29,899	37.7	217,105	32.2
Transportation and communication.....	803	76,661	8.9	283,675	12.6
Retail trade.....	5	1,257	4.9	228,729	10.3
Public employment.....	73	7,451	2.1	50,888	12.0
Fishing.....	3	1,305	1.1	9,437	26.0
Lumbering and logging.....	7	910	31.8	47,409	37.8
Miscellaneous ¹	131	6,192	16.8	1,094,950	16.0

¹ Due to "no job" and "temporary lay-off" only.

² Hotel and restaurant employees, stationary engineers and firemen, theatre employees, barbers and unclassified workers.

According to a publication of the Department of Labour, *Labour Organization in Canada*, for the calendar year 1934, the distribution of union membership was as follows:—

	Membership	P.C. of Total
Mining and quarrying	23,614	8.4
Building	22,038	7.8
Metal	12,149	4.3
Printing and paper making	14,224	5.1
Clothing, boots and shoes	22,253	7.9
Railroad employees	67,346	23.9
Other transportation and navigation	19,523	6.9
Public employees, public service and amuse- ments	26,398	9.4
All other trades and general labour	74,229	26.3
Total	281,774	100.0

Now although individually manufacturing, transportation and communication, and building and construction show different results from the census, combined they show results remarkably close. The total union membership, May 31, 1931, was 311,537 (or 1.104 times that of 1934). If the different industries in 1931 were represented in labour unions to anything like the same extent they were in 1934, manufacturing, transportation and communication, building and construction must have been fairly fully reported by the labour unions in that year. If we add these three, the labour unions and census unemployment figures compare as follows:—

	Unions	Census
Total reporting	164,305	1,107,397
Number unemployed	28,468	199,651
Percentage unemployed	17.3	18.0

This indicates that the labour union personnel and the census fare very much the same in regard to unemployment, and that the chief cause of disagreement is the sample. This would be very promising, if the same approximation were found in 1921 but in this case the results were very disappointing. However, this can not be regarded as the fault of the union figures as much as of the census since the classification in 1921 was not only incomparable with that of the labour union reports but also with that of the Census of 1931. Indeed the discrepancy in individual industry groups, shown above for 1931, may be set down to classification. Nothing can be concluded from the differences in 1921. The difference in classification may be understood from the fact that an attempt to compare the personnel by occupation class, in tabular form, had to be abandoned.

(5) *Numbers Reporting and Unemployed.*—As material of historical interest and also of possible use in estimating or appraising unemployment conditions in the fifteen years, Table 14 shows, from month to month, the number reporting and the number unemployed in labour unions from June, 1920, to December, 1935.

(6) *Industries Failing to Report.*—An attempt to build up inductive estimates from Table 14 by watching the particular industries that failed to report in any month and estimating their probable number unemployed from the percentage shown by the few that reported and the largest number that reported at a nearby month and weighting the totals accordingly, failed, partly because the failure to report was not confined to a few occupations, partly because of the aforementioned incomparability in classification of industries. That there was good reason to expect results in this way may be seen as follows: in 1931 the census (as mentioned) showed 17.0 p.c. unemployed while the labour unions showed only 16.2. Now it so happened that lumbering (unions) in that month reported only 910 members while it should have reported several thousand. Estimating the number unemployed of these several thousand from the percentage unemployed of the 910 reporting, we could easily add sufficient to the total unemployed in labour unions to bring the union figures in exact accord with the census. A similar experiment for 1921 failed to effect satisfactory results. However, use will be made later of Table 14, in estimating unemployment for particular industry groups.

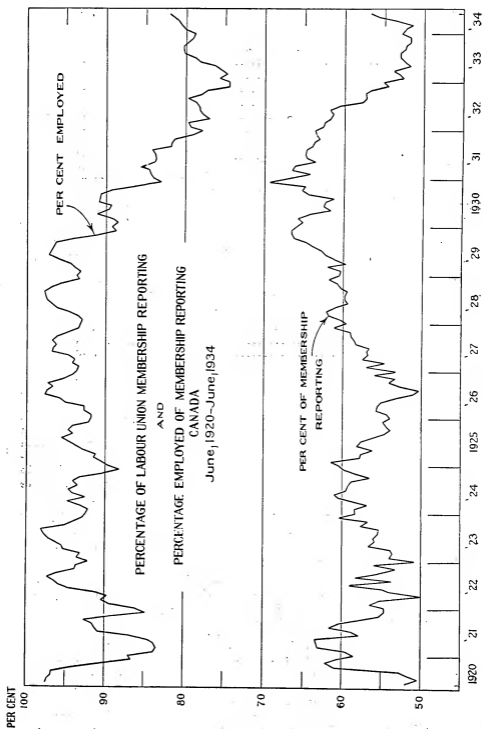


Chart 14

(7) *Correction for Sample.*—Accordingly it was decided that the only recourse was to correct the labour union percentages unemployed on a mathematical basis, i.e., correct them for sample on the basis of the results shown in §3 above. The periods of increasing employment needed little or no correction. The corrections and the labour union figures thus corrected are shown in Table 13. It will be noticed that, as thus corrected, the May 31, 1921, and 1931 agree almost exactly with the census figures of June 1. No use whatever was made of these census figures to bring about these results. It is hardly credible that such agreement should be reached by accident and it seems safe to conclude that from June, 1920 to May 31, 1931 the figures as thus corrected are very close approximations of the truth. No further correction therefore was considered necessary.

(8) *Correlation of Index of Membership and Percentage Employed.*—The figures thus corrected were not regarded as satisfactory for the period following June, 1931. The long depression period in employment was accompanied by a dropping out of registered members and this caused a further error in addition to that caused by the per cent sample. This dropping out is seen in Chart 14. We could assume, possibly, that the members thus dropped from the unions remained unemployed, but this was considered too long a shot. However, it seemed safe to conclude that the members dropping out were unemployed at the time they dropped out to the extent that the percentage dropping out correlated with the percentage employed (of those remaining) after both were corrected for long-term trend. This merely means that the fluctuations from month to month of the percentage dropping out were dependent upon the percentage employed.

If x_1 = index of membership and x_2 = percentage employed, both corrected for long-term trend:—

1. From June, 1931-March, 1934 $x_1 = .54 x_2$ $r = .68$.
2. From March, 1934-December, 1935 $x_1 = .29 x_2$ $r = .11$.

The coefficient of x_2 in both cases was used as a correcting factor and the corrections, using May 31, 1931 as base, were as seen in Table 13. These corrections were considered as unemployed and subtracted from the percentage employed already corrected for sample. The percentage employed in labour unions, as thus corrected, is seen in Chart 15 as an index.

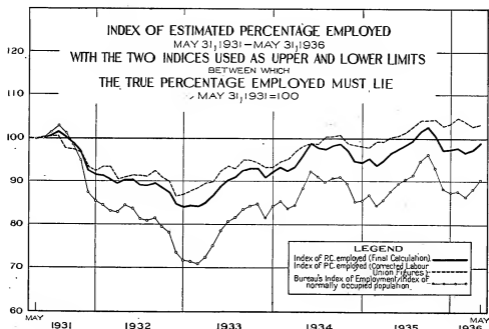


Chart 15

Now if the labour union percentages unemployed as thus corrected were the estimate of unemployment to which we were to be committed, dissatisfaction would be amply justified. There is a speculative element at one point, *viz.*, the correction made for the members dropping out of the unions. Here it was assumed that the correlation caused by the number of members thus dropping out (freed from long-term trend) with the decrease in percentages employed was due to the percentages employed as a causal factor. This, of course, is reasonable enough. There seems to be no other explanation of a non-trend drop in membership in sympathy with a drop in employment and a rise with a rise, except that the members thus dropping out are unemployed at the time they drop out. Further, we have the evidence, or the opinion, of persons familiar with the organization of labour unions on this matter. In a publication, *Labour Organization in Canada* (Department of Labour, 1934) we have the following comment: "Owing to the fact that union members, through being out of employment, were unable to pay their monthly dues . . . their names removed from the records . . . it is . . . contingent upon the regular payment of the prescribed fees that membership in the union is maintained." However, this assumption of course is not very good statistics and is not submitted as such. Emphatically, these figures are not submitted as the final estimates of employment or unemployment and were not intended as such. Their purpose was twofold as will now be explained.

Upper and Lower Limits of Estimate.—It was desired to obtain a figure in some way commensurate with the percentages employed (or unemployed) on which to hang an estimate. Our great difficulty in making estimates of unemployment is that while we may know or can estimate satisfactorily the number of persons employed we have nothing on which to base the number of wage-earners at risk. It has already been shown and laboured that these are subject to violent fluctuations especially in Canada. To base an estimate of unemployment upon the number employed at present and the number of wage-earners in 1931, or these as increasing with the population, is clearly out of the question. We may have a great deal of current evidence of movements in the wage-earning population by which we may know the *nature* of what is happening, but to know the *extent* of this happening is a different thing. We could work out a good many correlations from current events, were it not for the fact that we have nothing with which to correlate them. A figure like the corrected labour union percentages is something commensurate with the true percentages. They hit the truth sometimes. This is evident from the fact that they concurred with the census figures both in 1921 and 1931.

They (in index form) are submitted as the upper limit of an estimate of which the lower limit is (the index of) the *number of wage-earning jobs per person normally gainfully occupied*. The two indices are shown in Chart 15, the index submitted as the final estimate being shown as well. It is postulated that the labour union unemployment does not vary as much as the actual unemployment of the main mass, for the very good reason that they *can not*. Even if they were perfect in every other respect they are only a sample and a sample can not vary as much as its universe. They coincide with the census at one end, *viz.*, May, 1931. The census is taken as the true figure. If they subsequently vary less than the true figures, it follows that to this extent they are in error, but the error is clearly one in excess (they are percentages *employed*, not *unemployed*) because the employment was going down, not up. Consequently they may safely be regarded as the upper limit. Similarly, the index of wage-earning jobs per person normally gainfully occupied may be regarded as the lower limit of variability since we are practically certain that the number of wage-earners contracts to some extent in sympathy with contraction in employment and *vice versa*. Between these two limits the truth must lie (see Introduction to this chapter).

If the limits are thus fixed, it is seen that even averaging the upper and lower charts would bring us within a reasonable distance of the true figures. Such an estimate would be far better than none at all and it is clearly impossible to make an estimate that will give the exact truth. However, it seems possible to give a better estimate than the average of the two charts.

It is seen that these two limits move in sympathy not only in respect to trend but also to monthly fluctuation. There are lags here and there but this was to be expected. Now there must be something in the fact that they correlate in this manner. They were obtained quite independently. The one set is taken entirely from the reports of labour unions; the other set

entirely from reports of firms, the census of gainfully occupied and the census of the age distribution of the population. Both are aimed logically at the truth, we are seeking and from this it would seem more far-fetched to conclude that their correlation was accidental or irrelevant to this truth than to conclude that it was due to the truth.

Final Estimate.—In brief, we have three sets of facts: (1) a large sample of labour union members with their unemployment from month to month; (2) an index of the number employed in business firms from month to month based on a large sample which, however, is from the employer (rather than the worker) side of employment, giving the quantity of employment available; (3) the knowledge that the number of persons gainfully occupied in a population is a fairly constant proportion, age for age, to the population over a period of time.

Now, either of the first two of these would alone give us the condition of unemployment if the sample were as representative as its size would lead us to expect, but we know it is not. The labour union figures of employment give a different picture according as unemployment increases or decreases because of changes in their membership and the number of those reporting. We believe that we have made allowance for this in so far as it can be done by a mathematical correction but there are always the non-mathematical elements with which to contend. However, we show a figure of the percentage employed for the month based on these labour union figures which, without calling upon any other set of data, estimated correctly the unemployment of the censuses of 1921 and 1931, and consequently must approximate the figures for other dates.

Next, the index of employment for firms seems to be very good as measuring the movement of the volume of employment. Consequently, by using the 1931 number of persons employed and calculating forward on the basis of this index we should have a figure for a subsequent month close to the actual figure for the number employed in that month. This would enable us to calculate the number unemployed if the number of wage-earners were independent of the condition of employment but we know this is not so. We attempt to make allowance for this by estimating the number of persons in the population normally gainfully occupied and getting a figure for the percentage employed of the persons normally gainfully occupied. Now, supposing this percentage is accurate we have something which ties the employment figures to the population better than the unemployment figures alone can do. If the ratio of wage-earners to the gainfully occupied remained constant we could use this figure directly, *e.g.*, in 1931, the number of persons gainfully occupied was 3,927,000 and the number of wage-earners employed was 2,133,000 so that the percentage wage-earners employed of the gainfully occupied was 54.3. Now, from 1931 on, the employment index dropped rapidly and the index of employed per 100 gainfully occupied dropped from 100 in June, 1931, to 70.8 in March, 1933. Applying this, we could calculate the percentage employed per gainfully occupied in March, 1933 as 70.8 p.e. of 54.3, or 38.4. If the gainfully occupied in the latter month held the same relationship to the wage-earners as in 1931 we could calculate the percentage of wage-earners employed in the latter month as 1.529 times 38.4, or 58.7, or we can take a short cut. The percentage employed of the wage-earners in 1931 was 82.9 which, multiplied by 70.8, is 58.7. We believe this for the reason that we have observed that, as employment shrinks, the number of wage-earners decreases, largely because new workers from various sources do not come in to take the place of those eliminated by death, old age, etc., (our definition of unemployed refers entirely to wage-earners) and partly because existing wage-earners go back to "own account" occupations.

On the other hand an estimate from labour union figures for this month, March, 1933, was 73.4 p.e. Now this is in accordance with the correct figure in June, 1931, *viz.*, 79.1, but we believe it is too high. However, it should be noted that the two sets of figures thus derived correlate at least to the extent of .96.

We have two bases of estimates, both of these largely factual—how should we use them? We could depend entirely upon the weights given to the two by the mathematical correlation which is very high (.96), but to this there is the objection that no matter how high the correlation is, the difference between it and perfection may make a considerable difference in the weight (depending of course upon the size of the standard deviation it has to work on). Again, we might average the two without weighting and, if we are to use the two at all, this would be

splitting the error if we believe one is too high and the other too low. But this would make the range of error too great and furthermore, we have reason to believe that the corrected labour union figure is closer than the other.

Consequently we adopt a method which with all its arbitrariness has the advantage of being true to a reasonable mean. A weight of one was given to each of the crude estimates and of two to the estimate based upon the correlation and the result was divided by four. For example, in March, 1933, (for percentage of wage-earners employed) the corrected labour union figure was 73.4, the percentage based upon the firms index was 58.7, the estimated percentage on the basis of the multiple correlation (.96) was 73.2. Applying the weights just mentioned, we have a final estimate of employed on this date of 69.6, i.e., 30.4 p.c. unemployed. This figure (30.4) was arrived at already by another method too complicated to use for monthly estimates and it has the advantage of giving us reasonable results since a higher figure would involve the assumption that the wage-earners decreased in number between June, 1931 and March, 1933 more than we believe that they did.

Value and Uses of the Estimates.—The final estimate thus computed is given in the second column of Table 1, the first column showing the same figures in index form. The point of placing this index first is to indicate that when all care has been taken to procure the best possible estimate, the most we can say of it is that it is *barometric*. It is not perfect and can not take the place of sampling, much less of a census. Estimates of all kinds are subject to a peculiar danger from their clientele, who are apt either to swallow them bait and hook or treat them with absolute scepticism. There seems to be no such thing as treating them as guides that will prevent wandering too far astray. This is all the more remarkable when we remember that there is nothing in our physical world that is absolutely accurate. Even a measurement with a yard stick is subject to the personal equation, while the direct report even under oath in a law court is carefully scrutinized before acceptance. All that is claimed for this estimate of employment is that it is much better than nothing. Without it we are absolutely at sea; with it we can not wander very far from the truth.

Once the estimate of the percentage employed is thus fixed it is easy enough to calculate the number of wage-earners and the number of unemployed, since the number employed is assumed to be known. Since we also assume that the total number of normally gainfully occupied is known it is a simple matter to calculate the number of persons who are normally gainfully occupied but not wage-earners. All these calculations are given in Table 1, and, of course, subject to all the errors to which the percentage employed is subject. Even so, a concept of these figures is useful. It is important to have a rough guide as to the number of persons who drifted away from the wage-earning class during the depression into the independent worker class or failed to leave the independent worker class as they would have done if employment had been expanding. To interpret these figures properly it must be remembered that the "gainfully occupied" included not only farmers and employers but also a large number of persons who may be designated as "no pay" workers. These refer to farmer's sons, boys and girls working in the stores or shops of their parents, etc.

Chiefly in order to qualify or explain the drift between wage-earner and gainfully occupied since 1931, a further calculation was made. The survivors of the rural population of each sex from 1931 to 1935 were calculated on the basis of the age distribution in 1931 and life tables. The results, by age groups, are shown in Table 8. From these figures two further calculations were made: (1) the number of these that would normally be gainfully occupied (on the basis of the age distribution of the normally gainfully occupied and the percentage occupied of the whole population, not the rural) and (2) the number that would normally be occupied as agriculturists.

It would be highly desirable to estimate the wage-earners and unemployed by provinces and industry groups. It is felt, however, that this is beyond the scope of the present monograph. The same reasoning and the same methods used in calculating the unemployment among the wage-earners *in toto* can not be used in calculating the parts. There is one principle assisting us in making the calculation from the total, viz., the constancy of large numbers. Where we have a sample as large as 300,000 labour union members, even if this is not a very representative sample, we have something, owing to its very size. The same applies to the reports of firms

making up the index of employment; also to such matters as age distribution, etc. When we come to specialize we lose this prop as well as involving ourselves in such traps as specialized age, sex, racial distribution, etc., as well as seasonal differences. It is submitted that the only manner in which unemployment estimates can be made for provinces and industry groups is by pure induction with a reliable estimate for the total as a base or check. In Table 15 the labour union figures for three industry groups combined—manufacturing, transportation and construction are shown since June, 1920. They are something near the truth. These are shown against the index of employment (reports of firms) in these three groups and against our own estimate of unemployment. The reader can make what use of them he likes, but it is here felt that to estimate a figure for these industries that might be misconstrued as official, would be too risky.

Industrialization.—Now that an estimate of unemployment has been submitted that was built almost entirely independently of theory, it may be considered safe to call attention to a point that may have important theoretical implications.

It was mentioned that a good line of reasoning upon which to base deductively an estimate of the number of wage-earners and consequently of the percentage employed or unemployed would be as follows: if we define "industrialization" as the number of wage-earning jobs per person normally gainfully occupied, then the *percentage wage-earners per normally gainfully occupied would be expected to vary in the long run with the long-term trend of industrialization*. The reasoning underlying this deduction is that industrialization must be considered a fairly smooth process. A sudden inrush from the ranks of independent workers to the ranks of wage-earners as a result of a sudden expansion in industries like that which took place from 1926 to 1929 must not be regarded as a permanent thing. Industrialization is something more stable than this. At the rate that Canada's population grew (from 62.1 p.c. wage-earners in 1921 to 65.4 in 1931), *viz.*, 3.3 p.c. in ten years, the whole body of gainfully occupied would be wage-earners in about a hundred years. This is, of course, absurd. No country is 100 p.c. industrialized. It is seen to be still more absurd when we remember that this 3 p.c. (or rather more than this 3 p.c., for it is almost certain that there was a drift away from industrialization between 1921 and 1926), took place in three years, 1926 to 1929. There is fairly good evidence of this in Table 5 and more could be produced. At this rate the population would be 100 p.c. industrialized by 1963, *i.e.*, in thirty-two years from 1931. This alone will give some idea of the abnormality of the years 1926 to 1929—probably fully as abnormal as the subsequent depression and from which the subsequent depression might have been expected. If the law "to every action there is an equal and opposite reaction" is true in the world of the natural sciences why should it not be true in the world of the social sciences?

If then, we regard the wage-earner per gainfully occupied as likely in the long run to follow the true process of industrialization, it follows that after a long period of depression it would come down to, or indeed go below, this process. Now it is remarkable that in our estimates achieved independently of this theory we should unexpectedly encounter this theory. Referring once more to Chart 15 it is seen that two independent indices—the corrected percentage employed in labour unions and the number of jobs per normally gainfully occupied—move in sympathy; also it is to be recalled that correlations between the two for two consecutive periods were roughly .98 and .93, which means that the percentage employed calculated from the jobs per gainfully occupied was subject to an error of only about 1 p.c. unemployed. (The standard deviation of the percentage employed was 3.4.) It should be made clear that these curves were obtained independently, *i.e.*, there was no previous doctoring of the one to make it agree with the other, nor was there any coincidence between the sources of information. We can not ignore a correlation so high as this.

Estimates Free from Common Fallacies.—Although the relationship expressed in this theory seems at first sight obvious, it is far from obvious when studied closely. If the theory is sound to the extent of standing up to mathematical expression, it points out a ready method of calculating unemployment so long as we have an index of employment. In any case—whether perfectly sound or not—a calculation made on this basis is certain to be nearer the truth than one made on the increase in employment and population. Indeed the idea was not uncommon at

the time employment took an upward swing after March, 1933, that for every unit increase in employment there should be a decrease in unemployment to the extent of this unit. This was ignoring the increase in the number of persons at risk. An equally common fallacy during the worst part of the depression was that the number of wage-earners increased with the population from the point this number had reached in 1931. This ignored the possibility of a large number of wage-earners going back to independent work, and what is still more important, a still larger number remaining in the "own account" or the "no pay" worker class and thus failing to fill the gap caused by deaths, etc., among the wage-earners; and yet, if we ignore this possibility we are taking the stand that what has happened repeatedly does not happen again. It is more reasonable to believe that the proportion of wage-earners changes than to believe that it does not, if experience counts for anything.

Significance of the Trend of Unemployment.—The foregoing part of this chapter has been devoted to estimates of employment and unemployment and the methods of estimating. No comments have been made upon the significance of the trend revealed. From the ordinary point of view of unemployment no such comments seemed necessary. Not only are seasonal and cyclic trends quite manifest in the figures but also a long-term trend of increasing unemployment is noticeable. Chart 12 which compares indices of employment with those of population is intended to save lengthily verbal comments. We may well believe that until the trend of employment once more crosses that of population, a condition of normalcy has not been restored. This is so familiar to observers on all sides that there does not seem to be anything new revealed by the estimates. However, when we read them in the light of the other chapters of the monograph we discover something not only new but apparently highly significant in the trend, *viz.*, a growing tendency to what we are calling "rigidity," *i.e.*, a tendency for unemployment, instead of being distributed among the workers as a whole, to be so concentrated that the volume of it at any given time is confined to one set of workers while others are immune. We do not know as yet whether the year-by-year monthly figures bear this out, but we find it quite apparent in a progression from the weakest to the strongest industries and occupations and in a comparison (for all workers) of the census years 1921 and 1931. It has been suggested that conclusions based upon a comparison between the two censuses are unsafe because the latter census was further advanced on a cycle of depression than the former. Consequently, we are under the necessity of finding data which show, not two points in the trend, but all the points. Now we have such data in the estimates, but the advisability of using estimates for purposes of arriving at conclusions on trend may be questioned. Emphatically, it would not be safe if the estimates were first based upon our theory of the trend, but our estimates are not. What estimating we have done has been merely a smoothing out of obvious defects to make samples more representative. Otherwise the figures are factual in so far as samples are factual. If the estimates contain errors, those errors must be casual as care was taken to remove trends before corrections were made in the samples. Such long-term trends as were originally in the factual figures are still there. It would seem from this that we are justified in using these estimates in investigating trends, in spite of a slight natural hesitancy in doing so.

Now if our quest has been made clear, *viz.*, to investigate whether there is a trend of concentration of unemployment, it will be seen that we have to make use of certain other findings of the monograph, particularly those shown in Chapter XI and Appendix 1, in measuring the trend. Our measure of concentration is the quantity i in the equation $p^i = A$, where i stands for "interchange," *i.e.*, number of major interchanges between the condition of being employed and the condition of being unemployed; p is the percentage of the year not worked and A is the percentage of the wage-earners losing no time during the year. The greater the i for a given size of p the more the employment is distributed among the workers; the smaller the i the greater the concentration.

If we had means of knowing how the size of i varies with the years we could tell the trend of concentration in industries. We have no direct means except from the Censuses of 1921 and 1931 and from these we know that i was smaller in 1931 than in 1921. However, we can derive certain facts from the month-to-month index of employment of the Dominion Bureau of Statistics which, while not identical with our i , is analogous to it. Statement CIV below shows this index from 1920 to 1935. Statement CV shows certain derivations from this index which must now be discussed.

The first column of Statement CV shows the mean index of the employed for the years 1921 to 1935; column 2 shows the standard deviation of the months around the mean of the year. This standard deviation is not seasonality since it is influenced by trend as well as seasonal variations. Of course our i is likewise so influenced. The standard deviation is a "foot-rule" or unit of measurement of change. One feature making for a large standard deviation is particularly important to us here. A larger standard deviation is produced by one large change than by many smaller ones. This may be illustrated as follows:—

Suppose we take two sets of five digits with a range of 8 from the largest to the smallest, but so that the sum of both sets is the same:

(1)	(2)
10	10
8	10
6	4
4	4
2	2
<hr/> 30	<hr/> 30

The standard deviation of the first set is 2.83 and of the second set 3.35. The first set spreads its changes evenly throughout the range; the second set changes spasmodically.

This is analogous to what happens in employing or dismissing workers. If due to seasonality or other causes there is a larger number employed in one month of the year than in another, it must mean either that the difference were laid off (permanently or temporarily) and consequently left unemployed, or that they were taken on from the ranks of the previously unemployed. Theoretically this assumption is not strictly justified in so far as some of those taken on came from own accounts, but in reality it was unemployment of a sort that made them change category so that no great error is involved in the assumption. Now if the persons affected were dismissed

CIV.—INDEX OF EMPLOYMENT AS REPORTED TO THE DOMINION BUREAU OF STATISTICS BY EMPLOYERS IN INDUSTRIES OTHER THAN AGRICULTURE, 1920-1935
(1920 = 100)

Month	Crude Index of Employment in															
	1920 ¹	1921	1922	1923	1924	1925	1926	1927	1928	1929	1930	1931	1932	1933	1934	1935
January 1.....	-	88.8	78.8	87.3	89.8	84.9	90.7	95.9	100.7	109.1	111.2	101.7	91.6	78.5	88.6	94.4
February 1.....	-	91.2	79.9	90.6	91.7	87.1	91.8	96.6	102.0	110.5	111.6	100.7	89.7	77.0	91.4	94.6
March 1.....	-	89.1	82.9	91.0	91.8	88.1	92.6	97.5	102.6	111.4	110.2	100.2	88.7	76.9	92.7	98.4
April 1.....	-	85.1	81.8	88.7	90.4	88.3	92.5	97.4	102.3	110.4	107.8	99.7	87.5	76.0	91.3	93.4
May 1.....	105.9	85.1	84.3	92.5	92.9	91.9	95.4	101.8	106.8	116.2	111.4	102.2	87.5	77.6	92.0	95.2
June 1.....	107.5	87.7	90.3	98.5	96.4	95.6	102.2	107.2	113.8	122.2	116.5	103.6	89.1	80.7	96.0	97.6
July 1.....	109.1	88.6	92.2	100.7	97.1	98.0	105.0	109.7	117.7	124.7	118.9	105.8	88.7	84.5	101.0	99.5
August 1.....	100.7	90.0	94.2	101.4	95.8	97.5	105.5	110.5	119.3	127.8	118.8	105.2	86.3	87.1	99.9	101.1
September 1.....	108.8	89.8	94.8	101.2	94.2	97.8	106.2	111.0	119.1	126.8	116.6	107.1	86.0	88.5	98.8	102.7
October 1.....	108.6	91.3	95.8	100.7	95.0	99.5	106.5	110.3	118.8	125.6	116.2	105.9	86.7	90.4	100.0	106.1
November 1.....	107.1	91.3	97.0	100.0	94.1	98.3	104.0	108.8	118.9	124.6	112.9	103.0	84.7	91.3	100.2	107.7
December 1.....	101.5	88.3	95.3	96.9	91.9	96.5	102.3	108.1	116.7	119.1	108.5	99.1	83.2	91.8	98.9	104.6

¹These figures can not be considered as strictly comparable with later indices.

or taken on gradually, a few each month, this would be indicated in a smaller standard deviation than if they were all dismissed or taken on in one month. In the illustration there were six changes altogether; in the one case they caused a standard deviation of 2.83, in the other of 3.35. Consequently, $6 \div 2.83$ and $6 \div 3.35$ or 2.12 and 1.79, respectively, have a real meaning as a measure of smoothness of change. Consequently the range divided by the standard deviation from year to year indicates the comparative spread of the unemployment among the workers and is analogous to, though not quite the same as, the i already discussed. The more a fixed amount of unemployment is spread among the workers, the less the individual worker suffers, i.e., the shorter the time he is unemployed during the year. In Statement CV the range is obtained by fitting a line through each year's monthly figures arranged from the largest to the smallest, the range being twelve times the slope of this line. It can easily be shown that the figures in column 5 of Statement CV are merely functions of the coefficient of correlation between the line

and the actual figures. The highest possible (implying a perfect correlation) is 3.48 so that any of the measures in column 5 divided by 3.48 gives the coefficient of correlation. Since 3.48 is the highest possible, it is obvious that small differences as between the figures of column 5 are very significant. The highest is 3.46 in the year 1924; the lowest is 3.27 in 1928 and this is a significant difference. The purpose of the calculation, however, is to ascertain whether any trend is noticeable. If we divide column 5 by column 1—and it seems reasonable to do so since the changes must depend somewhat upon the number of workers—we have a fairly definite trend of decrease from 1921 on. If we leave the figures as they stand we have another kind of trend. The figures are smaller for the boom years and larger for depression years. The interpretation of this is that unemployment is more evenly spread in depressions than in booms, although, of course, the volume of unemployment is less in booms. Consequently we have reason to feel certain that the decrease in the r between 1921 and 1931 was not caused by the fact that 1931 was two years on in the depression while 1921 was only one year. The position in the cycle mitigated rather than exaggerated the growing tendency to rigidity or concentration of unemployment so that those who lose any time lose more time as the years go on. This conclusion alone is very important.

CV.—MEAN INDEX OF EMPLOYMENT AS REPORTED TO THE DOMINION BUREAU OF STATISTICS BY EMPLOYERS IN INDUSTRIES OTHER THAN AGRICULTURE, AND RELATED DATA, 1921-1935

Calendar Year	Mean Index (1)	Standard Deviation (2)	Standard Deviation ÷ Mean Index (3)	12-Month Range (4)	12-Month Range ÷ Standard Deviation (5)
1921.....	88.9	2.03	0.23	6.751	3.33
1922.....	89.0	6.67	0.75	22.527	3.38
1923.....	95.8	5.15	0.54	17.241	3.35
1924.....	93.4	2.27	0.24	7.851	3.46
1925.....	93.6	5.01	0.54	16.611	3.32
1926.....	99.6	6.00	0.61	20.236	3.32
1927.....	104.6	5.02	0.57	19.489	3.29
1928.....	111.8	7.59	0.68	24.810	3.27
1929.....	119.0	6.87	0.58	23.230	3.38
1930.....	113.4	3.71	0.33	12.603	3.41
1931.....	102.7	2.44	0.24	8.425	3.45
1932.....	87.5	2.19	0.25	7.431	3.39
1933.....	83.4	5.00	0.71	20.194	3.39
1934.....	96.6	4.24	0.44	14.140	3.33
1935.....	99.4	4.73	0.48	16.200	3.42
Year ended June 1, 1931.....	108.3	7.50	0.69	24.150	3.22

CHAPTER VII

SEX IN RELATION TO UNEMPLOYMENT

Concentration of Female Wage-Earners.—The narrower female occupation structure is shown in the fact that among males the largest group (labourers) contains only a little more than one-fifth of all wage-earners, while among women the largest group (service) has almost one-half of the total. In fact, one-third of all women wage-earners are in personal service, a sub-group. The three most important female groups (service, clerical, manufacturing) take in 84 p.c. of the women wage-earners, while the three most important male groups (labourers, manufacturing, and transportation) only contain 50 p.c. of the wage-earning class.

This difference in distribution between the sexes appears with even greater prominence among industry groups. There we have 90 p.c. of the women wage-earners in service, manufacturing and trade, while the three most important male industries only contain 51 p.c. The six least important female industry groups have 2 p.c. of the wage-earners, the lower six male groups 28 p.c.

On June 1, 1931, the percentage of males not at work in Canada was 20.87, of females 8.74. It would seem that the force of unemployment struck males two and one-half times as hard as females. But this statement, like all averages, requires analysis and breakdown for its interpretation. The fact that females are concentrated in certain positions in the economy and males are spread very widely, affects the question basically from the viewpoint of explanation and remedy.

For example, 8.10 p.c. of the male wage-earners were in construction and only 0.02 p.c. of the female wage-earners. Construction was one of the hardest hit of the occupation groups in 1931, 29.24 p.c. of its workers being idle on June 1 of that year. Obviously this will affect the male total more than the female due to the greater number of men affected. Such females as were engaged in construction occupations (90 in number, mainly tinsmiths and sheet metal workers) showed 24 p.c. unemployed on June 1.

Consider the occupation groups containing more than 1 p.c. of the female wage-earners, as listed below:—

CVI.—PERCENTAGE OF WAGE-EARNERS NOT AT WORK JUNE 1, FOR CERTAIN OCCUPATION GROUPS, BY SEX, CANADA, 1931

Occupation Group	P.C. of Wage-Earners Not at Work June 1	
	Males	Females
Manufacturing.....	18.34	14.10
Transportation and communication.....	13.31	5.99
Commercial.....	9.19	10.30
Professional service.....	6.48	4.88
Personal service.....	12.77	7.74
Clerical.....	8.81	8.13
Labourers.....	38.28	15.65

It is plain that except for labourers, none of the seven groups show two and one-half times as much male unemployment as female.

If we average in somewhat unorthodox fashion, paying no attention to the different numbers engaged in the different occupations, we find that the male occupations average 15 p.c. unemploy-

ment and the females 10 p.e.—the males thus showing one and one-half instead of two and one-half times female unemployment. Thus a part of the more heavy male unemployment is explained by the distribution of the sexes into occupation groups.

Occupational Differences.—Statement CVI shows a considerable difference between occupations in the amount of the sex differential. Clerical and commercial occupations have very small differences between the sexes. Manufacturing and service show considerable differences, all in the same direction, while male labourers' and transportation workers' unemployment is out of all proportion to that of females.

In the commercial group the largest class is salesmen and saleswomen. Three-fifths of the men and nine-tenths of the women of the group are among its 140,000 wage-earners. Average weeks lost during the year ended June 1, 1931, by men were 5.7, by women 6.2. Thus we see that in this large class of men and women working under similar conditions, doing almost interchangeable work, women actually lose somewhat more time than men. In the clerical group the class bookkeepers and cashiers record 4.5 weeks unemployment for males and 3.4 for females; general office clerks have a similar differential, males and females respectively losing 3.8 and 2.7 weeks.

In professional service 90 p.e. of the females engaged are school teachers or nurses. Nursing is essentially a female occupation; we can make no sex comparisons within it. Males in professional service are not comparable with females except in the class of school teachers. Male school teachers lost 1.5 weeks in the census year and females 1.9 weeks. Though the value of this profession as a guide for comparison is somewhat diminished by its small unemployment it does indicate at least equal idleness for women as for men. Of the women in transportation and communication 84 p.e. are telephone operators, in which class few are men; the men are engaged as sectionmen, seamen, teamsters, truck drivers, where there are no women. Thus here again the sex incidence of unemployment in a definite occupational class can not be determined.

As for the category of labourers, in which females suffer two and one-half times as heavily from unemployment as males, we have an indication from Table 59 of Volume VII of the 1931 Census, that among the gainfully occupied females of this group 80-87 p.e. work in the industry of manufacturing while the males are more scattered, including a considerable number in construction, steam railways, etc., where they are in general temporary labour of the most casual kind. The females in the class are often attached, in factories, to fairly definite, though unskilled jobs. This information is given only for the gainfully occupied but it happens that 99 p.e. of the class "labourers" of the census are wage-earners. It thus seems that considerations of differences in industrial attachment would explain a good part of the sex differential in unemployment of this group.

Cause and Duration.—Thus the census shows that part of the employment differences between males and females is due to their situation in different occupations; and much also in their situation in different classes within the major groups. But some of the difference still remains. It will be of interest to see how it is distributed as between causes of unemployment, and duration groups.

Consider the classes of sales persons, office clerks and school teachers. In the first and third class the sexes lose about equal lengths of time due to "no job," but male "office clerks" lose more than female. Male office clerks lose more time due to "temporary lay-off" than do female, but in the other two classes females are higher. Females in all three classes are more affected by illness than males; though the total of all occupations shows a slight difference in the opposite direction (0.55 weeks lost through illness by males, 0.51 by females), perhaps because in the total are included many less favoured male occupations, e.g., construction in which males lose 0.85 weeks on account of sickness. The greater female liability to illness has been reflected in relatively unfavourable disability experience of life insurance companies; at the present time the practice is to grant women applicants a policy of more restricted benefits than is granted males and at a higher price.

CIVIL—WEEKS LOST PER WAGE-EARNER AND PER WAGE-EARNER LOSING TIME IN THREE SELECTED OCCUPATIONS, BY CAUSE, CANADA, YEAR ENDED JUNE 1, 1931

Occupation	No Job		Temporary Lay-Off		Illness		Accident	
	Males	Females	Males	Females	Males	Females	Males	Females
WEEKS LOST PER WAGE-EARNER								
Salesmen and saleswomen.....	4-76	4-67	-36	-76	-48	-64	-04	-03
Office clerks.....	2-90	1-85	-47	-38	-33	-38	-03	-01
Teachers—school.....	1-13	1-20	-12	-17	-24	-47	-01	-01
WEEKS LOST PER WAGE-EARNER LOSING TIME								
Salesmen and saleswomen.....	26-11	26-53	11-83	12-37	12-53	10-83	10-70	11-43
Office clerks.....	26-16	24-02	12-78	10-59	11-06	9-84	10-89	9-07
Teachers—school.....	27-04	30-60	12-06	16-09	18-00	20-16	15-08	22-31

The greater liability of males to accident, likewise known to insurance companies, is shown in the three occupations above, and more strongly still for all occupations (0.11 weeks lost by males against 0.02 by females). Perhaps part of this difference among Canadian wage-earners is due to the higher average age of the males, since, as noted in Chapter V, liability to accident of both sexes increases sharply with age.

As far as these three occupations are concerned there do not seem to be any important differences between the sexes in duration of unemployment by those losing time; for Canada as a whole we find that females lose shorter periods than men when they do lose time for each of the causes "no job," "lay-off," "illness" and "accident" separately. "Strike or lockout" shows longer duration for women than for men, which is more likely to be due to the smallness of the figures than to any real tendency for strikes involving women to last longer than strikes involving men.

Females Leaving Ranks of Wage-Earners.—The problem arises of the extent to which such greater male unemployment as has not been explained by differences of occupational structure between the two sexes can be due to the tendency of women, particularly married women, to cease to consider themselves members of their occupation after a certain period of unemployment.

In Statement CVIII below for groups and classes containing more than 5,000 men and 5,000 women we see that in manufacturing a greater percentage of females than of males lose time during the year. But among the males who do lose time, in Canada, 6.82 p.c. lose 49 or more weeks, while among females only 3.20 p.c. lose 49 or more weeks. It is hardly likely that there is a tendency for employers to re-hire dismissed females more quickly than males. The most probable explanation is that females cease to consider themselves wage-earners after a year's unemployment and are recorded in the census, if they are married, as homemakers. In the branches of manufacturing shown, for each of the four largest provinces, there was only one case (wood products in British Columbia) where the percentage of females losing time who lost 49 weeks was greater than of males. Warehousing and storage, and commercial occupations, and the main branch of each separately, tell the same story. But school teachers, with a slightly higher percentage of females than of males losing time, show, in Ontario and British Columbia in particular, very considerably greater proportions remaining idle the whole year. Finally, in clerical occupations females behave in very nearly the same fashion as men.

Can the exceptions, clerical occupations and school teachers, to the general rule that a smaller percentage of females than of males losing time lose the whole year, be due to the lesser proportion of married women in these two classes? The figures below* indicate that the lower percentage of single women in manufacturing is, in fact, associated with the smaller percentages of those losing time who lose the whole year. The three occupations with the highest percentage of single women on the list are school teachers, professional and clerical workers. It is, of course, plain that the differences in the distribution of women in various occupations as to conjugal condition are small, yet such differences as exist are in the anticipated direction.

* Applying to the gainfully occupied as a whole.

CVIII.—PERCENTAGE OF WAGE-EARNERS LOSING TIME AND PERCENTAGE OF THOSE LOSING TIME WHO LOST 40 WEEKS AND OVER, BY SEX, FOR SELECTED PROVINCES AND OCCUPATIONS, CANADA, YEAR ENDED JUNE 1, 1931

Occupation	P.C. Losing Time (Canada)		P.C. of Those Losing Time ¹ Who Lost 40 Weeks and over										P.C. of Females Single (Canada)
			Canada		Quebec		Ontario		Manitoba		British Columbia		
	Males	Fe- males	Males	Fe- males	Males	Fe- males	Males	Fe- males	Males	Fe- males	Males	Fe- males	
All occupations.....	44-00	25-14	8-17	6-65	7-99	4-91	8-80	6-21	10-92	10-56	10-44	10-31	80-75
Manufacturing.....	48-53	52-32	6-82	3-20	6-27	2-96	7-11	3-13	8-35	6-54	8-36	5-76	83-75
Vegetable products.....	41-28	58-49	7-29	2-84	5-80	2-32	7-85	3-36	10-24	6-35	10-00	5-93	83-47
Animal products.....	43-38	51-43	7-58	2-29	7-53	2-16	7-16	2-34	11-09	6-96	7-14	7-88	83-69
Textile products.....	53-47	52-48	6-11	3-31	5-60	3-16	6-06	3-05	10-61	6-96	13-51	6-33	82-81
Textiles.....	49-94	54-82	4-47	2-53	4-03	2-47	4-79	2-43	-	13-64	27-27	3-45	87-02
Textile goods and wear- ing apparel.....	56-12	51-54	7-20	3-64	6-71	3-42	6-94	3-40	10-77	6-76	12-41	6-73	81-67
Wood products; pulp, paper, and paper pro- ducts.....	44-80	44-98	6-10	3-68	4-79	2-97	6-52	3-75	9-00	4-59	7-20	8-08	87-49
Transportation and commu- nication.....	34-57	19-91	5-66	5-27	5-94	4-55	5-64	5-25	7-47	5-85	6-83	6-59	88-84
Other transportation.....	22-23	19-95	7-90	5-30	10-34	4-59	6-80	5-23	9-62	5-95	8-73	6-75	89-57
Warehousing and storage.....	33-24	50-55	6-51	3-11	5-87	2-43	6-28	3-79	8-54	3-90	8-16	2-73	92-00
Commercial.....	20-01	28-05	10-54	7-94	9-82	7-49	10-87	6-85	14-46	11-60	13-06	9-88	81-36
Salesmen and saleswomen.....	24-54	28-47	10-89	8-13	10-08	7-55	10-88	7-03	15-87	12-27	13-44	10-32	85-27
Service.....	19-79	18-77	10-33	7-35	8-74	6-19	9-78	7-08	14-77	9-88	13-76	9-22	78-74
Professional.....	11-97	9-60	16-65	12-67	15-83	10-39	14-44	14-25	18-44	20-31	19-78	15-96	93-00
Teachers—school.....	6-41	7-36	16-59	22-46	22-22	21-32	10-76	20-08	27-84	28-74	17-64	24-18	94-83
Personal.....	29-70	22-19	8-63	5-76	6-75	4-98	7-97	5-79	12-45	8-22	12-11	7-99	71-31
Cooks.....	45-11	23-04	10-73	5-05	6-47	4-69	8-05	5-84	17-70	4-90	16-03	7-03	69-74
Domestic servants, n.e.s.....	30-31	21-48	7-89	5-50	4-68	4-76	6-28	5-66	9-82	8-34	13-45	7-51	86-42
Waiters and waitresses.....	34-25	36-70	8-20	5-70	6-71	6-21	9-58	4-27	10-34	7-62	9-84	7-48	81-07
Laundering.....	37-38	33-66	10-97	3-77	7-35	3-05	9-39	3-89	32-73	5-97	16-38	5-39	62-74
Clerical.....	18-02	17-41	11-48	18-18	10-54	9-09	12-40	10-98	15-77	15-80	11-40	17-88	93-84
Bookkeepers and cashiers.....	19-13	16-82	13-61	10-61	8-88	6-93	17-40	10-72	18-86	13-35	12-61	9-89	91-50
Other.....	17-49	14-58	10-40	6-43	10-84	6-70	10-77	6-05	14-70	8-24	10-67	7-34	92-48
Other.....	69-20	52-73	10-89	5-35	10-67	4-61	11-81	5-82	14-36	13-92	14-72	8-24	86-44

n.e.s.—not elsewhere specified.

¹ Italics used when figure for females greater than that for males.

Female Content and Percentage Unemployed.—The fifty occupations having the highest proportion of females were selected and arranged in order of percentage unemployment on June 1, 1931, running from least to highest (Statement CIX). Included are 10 representatives of the manufacture of textile wearing apparel, 6 of the manufacture of basic textiles, 6 occupations in professional service and 7 in personal service, 3 in each of tobacco products and vegetable foods, the remaining 15 scattered. On the whole, the list is representative of female occupations and it indicates how narrow, in comparison with males, is the field of their economic activities.

Showing least unemployment among the fifty occupations are proof readers and showing most are actresses, the range being from 2 p.c. up to 38 p.c. Scatter diagrams of the occupations show a small, though probably significant positive correlation among these occupations between female unemployment and that of males under 20, and a slightly greater correlation between females and males of all ages.

A scatter diagram of occupations by percentage male unemployment and percentage of women in occupation, showed no recognizable correlation. It is interesting that among industries (Chapter III) there was a very considerable correlation between these elements. This is partly because of the nature of the industrial classification as compared with the occupational (in the former the element of organization, which is associated with both female content and unemployment, being important) and partly because we used only those cases (28 in number) in which there were considerable numbers of both females and males. It is not unlikely that a large part of such correlation as exists among industries between percentage unemployment and female content results from the fact that certain types of industries, e.g., logging, construction, mining, which are subject to very high unemployment, happen also to have very few women wage-earners.

The percentage of unemployment among women is lower than that among men; it is believed that there are two main causes for this: (1) the fact that women are only suited to employment in the organized industries whose characteristic is stability of employment for such persons as are taken on; (2) the fact that women, if single, reside with their parents and tend to report no occupation when they are idle, or, if married, live with their husbands and report themselves as homemakers.

CIX.—FIFTY OCCUPATIONS WITH HIGHEST PERCENTAGE OF FEMALES, ARRANGED IN ORDER OF PERCENTAGE UNEMPLOYMENT AMONG FEMALES, CANADA, JUNE 1, 1931

Occupation	Occupation Group	Females as P.C. of Wage-Earners	P.C. of Females Unemployed
Proof readers.....	Mfg.—Printing, publishing, bookbinding.....	45-1	1-8
Librarians.....	Service—Professional.....	80-1	1-9
Nurses—in training.....	Service—Professional.....	100-0	2-08
Social welfare workers.....	Service—Professional.....	64-20	2-9
Teachers—school.....	Service—Professional.....	77-44	3-99
Housekeepers, matrons, and stewards.....	Service—Personal.....	95-65	5-27
Other.....	Service—Personal.....	46-55	6-02
Telephone operators.....	Transportation and Communication—Other transportation.....	93-73	6-06
Domestic servants.....	Service—Personal.....	94-04	7-07
Electric lamp makers.....	Mfg.—Electrical apparatus.....	78-5	7-8
Forewomen and overseers.....	Mfg.—Textile goods and wearing apparel.....	61-65	8-2
Kniters.....	Mfg.—Textile goods and wearing apparel.....	56-16	8-48
Inspectors, lookers, and menders.....	Mfg.—Textiles.....	85-30	8-75
Other.....	Mfg.—Textiles.....	65-42	8-86
Washing and drying machine operators.....	Service—Laundering; cleaning, dyeing, and pressing.....	50-0	9-1
Finishers and calenders.....	Mfg.—Textiles.....	43-56	9-3
Office appliance operators.....	Clerical.....	55-63	9-50
Other.....	Service—Laundering; cleaning, dyeing, and pressing.....	94-85	9-78
Stenographers and typists.....	Clerical.....	73-	10-
Cigarette makers.....	Mfg.—Tobacco products.....	63-2	10-0
Glove makers.....	Mfg.—Leather products.....	45-89	10-08
Woozers.....	Mfg.—Textiles.....	100-00	10-46
Nurses—graduate.....	Service—Professional.....	100-00	10-7
Dressmakers' apprentices.....	Mfg.—Textile goods and wearing apparel.....	53-11	11-0
Cigar makers.....	Mfg.—Tobacco products.....	58-18	11-03
Spinners.....	Mfg.—Textiles.....	65-86	11-03
Paper box, bag, and envelope makers.....	Mfg.—Pulp, paper, and paper products.....	82-52	11-38
Spoolers, warpers, and beamers.....	Mfg.—Textiles.....	72-08	11-81
Other.....	Mfg.—Tobacco products.....	53-42	11-9
Dressmakers.....	Mfg.—Electrical apparatus.....	100-00	12-02
Sewers, seamstresses—not in factories.....	Mfg.—Textile goods and wearing apparel.....	92-78	12-40
Packers, wrappers, and labellers.....	Mfg.—Textile goods and wearing apparel.....	64-09	13-20
Charworkers and cleaners.....	Warehousing and Storage.....	87-37	13-37
Bookbinders.....	Mfg.—Printing, publishing, bookbinding.....	58-70	13-62
Waitresses.....	Service—Personal.....	53-31	13-64
Other.....	Mfg.—Printing, publishing, bookbinding.....	62-94	13-9
Other.....	Mfg.—Textile goods and wearing apparel.....	57-14	14-07
Hairdressers' apprentices.....	Service—Personal.....	44-0	14-3
Health professionals, n.e.s.....	Service—Professional.....	81-5	14-5
Other.....	Mfg.—Vegetable foods.....	43-1	15-1
Sewers, sewing machinists—shop, factory.....	Mfg.—Vegetable foods.....	88-46	15-90
Confectionery and biscuit makers.....	Mfg.—Vegetable foods.....	46-73	16-00
Nurses—practical; orderlies.....	Service—Personal.....	65-53	18-34
Milliners.....	Mfg.—Textile goods and wearing apparel.....	98-37	19-71
Milliners' apprentices.....	Mfg.—Textile goods and wearing apparel.....	100-00	21-5
Hat and cap makers.....	Mfg.—Textile goods and wearing apparel.....	43-58	24-9
Canners—fruit and vegetable.....	Mfg.—Vegetable foods.....	55-34	25-9
Fish canners and curers.....	Mfg.—Animal foods.....	55-07	36-81
Actresses.....	Service—Recreational.....	45-9	37-9

n.e.s.—not elsewhere specified.

*Where the base of the percentage is less than 100, the percentage is given to the nearest whole number; between 100 and 1,000, to one place of decimals, and 1,000 and over, to two places of decimals.

CHAPTER VIII

JUVENILE UNEMPLOYMENT

Occupations of High Juvenile Content.—In the same way as for females a list was made up of the 50 occupations with the largest percentage of juveniles (defined for our present purpose as males under 20) among their number. They run from 17.23 p.c. of their male workers under age 20 to 88.07 p.c., arranged in order of percentage unemployment among juveniles on June 1, 1931. "Other" occupations in trade and "newsboys" seem to be least affected by juvenile unemployment, while haulage workers and drivers in coal mining are lowest in the list. Included are 19 apprenticeship occupations.

CX.—FIFTY OCCUPATIONS WITH HIGHEST PERCENTAGE¹ OF JUVENILES, I.E., MALES UNDER 20 YEARS OF AGE, ARRANGED IN ORDER OF PERCENTAGE UNEMPLOYMENT AMONG JUVENILES, CANADA, JUNE 1, 1931

Occupation	Occupation Group	P.C. of Male Wage-Earners Juvenile	Weeks Lost per Juvenile
Other.....	Trade.....	18.84	3.66
Newsboys.....	Trade.....	68.2	4.69
Printers and bookbinders' apprentices.....	Mfg.—Printing, publishing, bookbinding.....	70.74	4.96
Office appliance operators.....	Clerical.....	27.7	5.11
Jewellers and watchmakers' apprentices.....	Mfg.—Precious metals and electroplate.....	72.1	6.07
Farm labourers.....	Agriculture.....	19.15	8.50
Stenographers and typists.....	Clerical.....	24.41	6.00
Other.....	Mfg.—Printing, publishing, bookbinding.....	19.6	7.04
Bakers' apprentices.....	Mfg.—Vegetable foods.....	88.07	7.55
Messengers.....	Transportation and Communication—Other transportation and communication.....	78.92	7.65
Machine tenders.....	Mfg.—Printing, publishing, bookbinding.....	44.60	8.01
Domestic servants.....	Mfg.—Miscellaneous products.....	20.79	8.27
Ushers.....	Service—Personal.....	20.12	8.79
Blacksmiths' apprentices.....	Mfg.—Metal products.....	62.5	8.87
Other.....	Transportation and Communication—Other transportation and communication.....	48.3	9.98
Delivery men and drivers, n.s.....	Transportation and Communication—Road transportation.....	26.85	9.19
Cabinet and furniture maker's apprentices.....	Mfg.—Wood products.....	85.3	9.25
Barbers and hairdressers' apprentices.....	Service—Personal.....	82.7	9.27
Machinists' apprentices.....	Mfg.—Metal products.....	61.84	9.69
Boot and shoe makers' apprentices.....	Mfg.—Leather products.....	86.6	9.97
Sewers, seamstresses—not in factory.....	Mfg.—Textile goods and wearing apparel.....	21.8	10.19
Plumbers' apprentices.....	Building and Construction.....	66.61	10.28
Electricians and wiremen's apprentices.....	Building and Construction.....	67.25	10.28
Paper box, bag and envelope makers.....	Mfg.—Pulp, paper, and paper products.....	20.0	10.41
Knitters.....	Mfg.—Textile goods and wearing apparel.....	23.91	10.41
Other.....	Unspecified.....	23.17	10.88
Weavers.....	Mfg.—Textiles.....	17.23	10.83
Tailors' apprentices.....	Mfg.—Textile goods and wearing apparel.....	84.0	10.99
Other.....	Mfg.—Tobacco products.....	21.5	11.03
Spoolers, warpers, and healders.....	Mfg.—Textiles.....	36.0	11.20
Other.....	Mfg.—Textiles.....	25.57	11.58
Spinners.....	Mfg.—Textiles.....	28.80	11.61
Packers, wrappers, and labellers.....	Warehousing and Storage.....	20.69	11.79
Confectionery and biscuit makers.....	Mfg.—Vegetable foods.....	18.53	12.30
Sheet metal workers' apprentices.....	Building and Construction.....	75.0	12.98
Box, basket, and packing case makers.....	Mfg.—Wood products.....	21.5	12.39
Carpenters' apprentices.....	Building and Construction.....	72.29	12.80
Moulders' apprentices.....	Mfg.—Metal products.....	72.8	12.95
Button makers.....	Mfg.—Miscellaneous products.....	27.	13.63
Painters' apprentices.....	Building and Construction.....	83.2	13.79
Bootblacks.....	Service—Personal.....	36.5	13.92
Other.....	Mfg.—Electrical apparatus.....	17.5	14.14
Sewers, sewing machine—shop, factory.....	Mfg.—Textile goods and wearing apparel.....	12.92	14.30
Boilermakers' apprentices.....	Mfg.—Metal products.....	61.7	14.30
Upholsterers' apprentices.....	Mfg.—Wood products.....	75.9	14.81
Other.....	Service—Recreational.....	38.23	15.67
Plasterers and lathers' apprentices.....	Building and Construction.....	71.7	15.71
Brick and stone masons' apprentices.....	Building and Construction.....	66.6	16.62
Haulage workers—drivers, cagers.....	Mining—Coal mining.....	21.80	23.53

¹See footnote to Statement CIX.

Apprentice Occupations.—The apprentice occupations were picked out and each was paired with the major trade or occupation bearing the same name. Thus jewellers' apprentices were paired with jewellers, bakers' apprentices with bakers and so on.

Percentage unemployment among apprentices was then correlated with unemployment in the corresponding occupation classes (Statement CXI) and the correlation was found to be .85, indicating that over 70 p.c. of the unemployment in the apprenticeship occupation was determined by the corresponding master occupation—the rest being due to random causes.

CXI.—UNEMPLOYMENT IN CERTAIN OCCUPATIONS AND IN CORRESPONDING APPRENTICESHIP OCCUPATIONS, MALES ONLY, CANADA, JUNE 1, 1931

Trade	P.C. Unemployed June 1, 1931	
	In Trade	Among Apprentices to Trade ¹
Printers and bookbinders.....	14.30	10.40
Jewellers.....	17.91	13.8
Bakers.....	16.13	13.45
Blacksmiths.....	24.58	17.4
Cabinet and furniture makers.....	22.91	18.9
Barbers.....	13.62	14.8
Machinists.....	19.50	15.01
Boot and shoe makers.....	19.88	13.7
Plumbers.....	26.69	21.36
Electricians and wiremen.....	18.07	19.46
Tailors.....	30.84	20.1
Sheet metal workers.....	34.58	20.6
Carpenters.....	32.61	19.91
Moulders.....	31.98	25.8
Painters.....	28.44	20.5
Boilermakers.....	24.50	19.1
Upholsterers.....	31.28	27.8
Plasterers and lathers.....	48.29	25.8
Brick and stone masons.....	41.92	28.4

¹ See footnote to Statement CIX.

It is interesting to observe that average unemployment in the 19 master occupations was 25.68 p.c., while in the 19 apprentice occupations it was 19.33 p.c.—much lower. Referring to the conclusions of the chapter on "Ages", we believe that this difference is an example of the inability of younger people to enter occupations in the first place and thus to come under the census definition of unemployment. The study of duration in Chapter V, showed plainly that it is not casier for a very young man to get a job than for one over 20—even though the percentage unemployment is higher at ages 20-24 than at 18-19.

The standard deviation of the apprenticeship occupations is 6.14 while that of the master occupations is 8.87—the latter show rather wider scatter considered on an absolute scale, but about the same when both are referred to their means. In duration of unemployment of those losing time there was a much smaller scatter both for apprentices and their master trade; the correlation, though rather lower, was still quite significant.

Dependency of Juvenile upon Older Unemployment.—A correlation was performed to find whether in the detailed occupation classes the unemployment among young persons was dependent on that of the older persons in the occupation. Excluding the 50 juvenile occupations (see list of the 50 occupations with highest percentage of male workers under 20) and those occupations in which less than 5 p.c. of the male workers were below 20 years of age, we get 129 occupations with significant numbers both of adults and juveniles. Among these there is a correlation of slightly under .60. Perhaps because the occupations are not as well defined, the correlation was definitely lower than that between apprentices and their trade proper. In cases other than apprentices where the percentage of juveniles was over 17.00, i.e., in the non-apprentice occupations attracting younger men, the correlation between unemployment among juveniles and the occupation as a whole is not as high as in the 129 occupations of more even age distribution.

CHAPTER IX

REGIONAL ASPECTS OF UNEMPLOYMENT

Introduction.—The regional aspects of unemployment are treated incidentally in many of the chapters of this monograph, notably in Chapters II, IV and XI. Although it is a very important subject, its importance in a population study would seem to lie chiefly in its measurement of the results of unemployment to the population rather than in any explanation of unemployment. We have the regional distribution of population, revealing the evenness or unevenness of spread of this population over the country. We have, in a large country like Canada, the population settled in spots, with an unreasonably large proportion of it congregated in cities and towns and other units. We have the consideration of mobility, i.e., the power or inclination of this population to move away from a locality of low to one of high employment. If this mobility were perfect it is evident that a great deal of the seriousness of the unemployment problem would be removed. One could say in objection to this inference that unemployment would still be (say in 1931) the average for Canada in that year. This might be true if *unemployment* as a population phenomenon were perfectly correlated with *employment* as an economic event but most assuredly it is not. Changes in volume of employment as an economic feature, could so correlate with changes in unemployment only if there was such a degree of mobility that the moment a job fell open a worker could be at hand to take it, but this is an impossibility, first, since the worker to be available had to be unemployed; secondly, since this mobility does not exist and the unemployed worker may not hear of the job, may not be financially able to move on account of the distance and other difficulties between him and the job, may not be willing to move, or may be legally prohibited from entering a new municipality. It is possible—indeed probable—that even in times of great unemployment some industries may be under-staffed for want of available workers.

Responsibility of the Region.—All this has a bearing upon regional unemployment. Chapter II provides information upon the volume of this kind of unemployment and upon the geographical distribution of unemployment. Chapter III introduces an index by which the influence of locality as a factor explaining unemployment is measured. The conclusion there is that it does not explain it—locality is merely a circumstance attendant upon the presence of the industry. If the industry were elsewhere situated the unemployment would probably be the same. Of course the locality may be held responsible for the *fact* that the industry situated there but this seems far-fetched. There seems to be only a limited number of responsibilities that can be attached to a region as such: (1) the nature of the industry that *can* be there situated; (2) its geographical situation from the point of view of facilitating mobility; (3) its actual powers to restrict the inflow of workers; (4) the versatility and mobility propensities of its own population; (5) the extent to which the region specializes in industry or occupation; (6) its seasonal condition (i.e., in the sense of comparative severity of winter and summer). Against these we have many factors which may influence the volume of unemployment in a region but over which the region may have no control, such as: (1) the powers of a central body in matters of immigration; (2) the powers of other regions to prevent an outflow of its workers; (3) trading restrictions; (4) the manipulation of business interests by other interests of the locality regardless of whether these business interests would be better served by being spread. For illustration of the last mentioned, let us suppose that a big industry was established in a large city and that that city by means of concessions, etc., did its best to retain that industry. Or let us suppose that a big industry situated in another country wishing to control the output of its particular product exerted pressure to prevent competition arising from a similar industry starting up in a particular locality where by virtue of its possibilities the same product could be produced more cheaply for certain markets. The locality which thus suffered could not be blamed for the lack of employment arising out of these causes.

Our observations in other chapters lead to the conclusion that the regional aspects of unemployment belong at least as much to the second set of categories as to the first, i.e., are due to causes over which the region has no control.

We have frequently observed that there are two ways of looking at unemployment: (1) the likelihood of losing a job once it is held; (2) the likelihood of remaining out of employment once a job is lost. Of the two the second would seem to be the more serious for the worker at large. On the whole the two probabilities go together, i.e., the person who is most likely to lose his job is the person who finds it most difficult to regain it, but this is only true within limits—"other things being equal." But other things are not equal and we find not only individual exceptions but a general principle behind these exceptions which leads to the belief that this principle is extending its sphere of action in time; e.g., two workmen equally likely to lose their jobs would have different degrees of difficulty in regaining them according to what industries they were attached.

Likelihood of Losing Jobs.—Taking the regional behaviour of unemployment from these two points of view, and consulting the data and charts in Chapters II, IV and XI we find: first, as regards the likelihood of losing jobs, the provinces in 1931 compared as follows:—

CXII.—PROVINCIAL COMPARISON OF PERCENTAGES OF MALE WAGE-EARNERS 10 YEARS OF AGE AND OVER NOT AT WORK JUNE 1, IN ALL INDUSTRIES AND IN TWO OF THE MAJOR INDUSTRIES OF THE COUNTRY, CANADA AND PROVINCES, 1931

Province	P.C. Not at Work June 1		
	All Industries	Agriculture	Manufacturing
CANADA.....	20.87	15.55	17.80
Prince Edward Island.....	7.72	3.01	(3.97)
Nova Scotia.....	22.43	10.20	18.87
New Brunswick.....	22.85	14.46	17.06
Quebec.....	19.44	11.49	15.50
Ontario.....	18.08	9.63	18.61
Manitoba.....	24.02	22.46	17.50
Saskatchewan.....	22.28	20.98	18.27
Alberta.....	24.00	19.56	16.78
British Columbia.....	27.45	23.15	21.97

We see in column 1 two eastern provinces and four western provinces faring much worse than the two large central provinces with their much more powerful industrial structure. Pushing this point a little further and taking one type of industry—agriculture (i.e., the agricultural labourers)—we see that while the facts remain the same as regards the four western provinces, it is no longer true as regards the eastern. In another main industry group—manufacturing—we see that the geographical distinction is very vague if existent. The real reason for the geographical distinction when all workmen (instead particular groups) were considered was the distribution of types of industries.

Likelihood of Regaining Jobs.—Let us now take the other aspect of unemployment, the likelihood of remaining out of work once the job was lost. We have devised a method of measuring this, but for the moment instead of using this method we can use a much simpler and more direct measure. We show below the number of wage-earners idle at any time during the year and the number of these who were back at work on June 1. This is so obviously factual that there is no difficulty in seeing what is meant by the percentage going back to work before June 1 of those who lost any time during the year. It is not as good as another measure to be given later as it does not indicate the time lost, but when we consider that June 1, 1931, was on a falling trend which lasted till March, 1933 we can see that the chances of those who were out of work on June 1 to regain employment for some time to come were very small. The data refer to males only.

CXIII.—MALE WAGE-EARNERS 10 YEARS OF AGE AND OVER LOSING ANY TIME DURING YEAR AND NOT AT WORK JUNE 1, AND NUMBER AND PERCENTAGE OF THOSE LOSING ANY TIME WHO WERE BACK AT WORK JUNE 1, CANADA AND PROVINCES, YEAR ENDED JUNE 1, 1931

Province	Male Wage-Earners				
	Total	Idle		Idle Some Time but Back at Work June 1, 1931	
		Any Time during Year	June 1, 1931	No.	P.C.
CANADA.....	2,022,260	889,743	422,076	467,667	52.56
Prince Edward Island.....	9,156	2,143	707	1,436	67.01
Nova Scotia.....	95,244	47,206	21,365	25,835	54.74
New Brunswick.....	96,310	32,046	15,182	16,947	52.80
Quebec.....	535,203	232,766	104,066	128,703	55.29
Ontario.....	752,851	322,376	140,666	181,710	56.37
Manitoba.....	132,883	57,074	31,916	25,158	44.08
Saskatchewan.....	116,157	44,105	25,884	18,221	41.31
Alberta.....	116,005	49,953	27,846	22,107	44.25
British Columbia.....	198,448	102,024	54,474	47,550	46.61

It will be noticed that there is a faint Central Canada trend in the percentages going back to work and a definite Prairie Provinces trend in the percentages not going back. There is a definite eastern as compared with western trend. The east to west trend will be seen much more definitely in a later table where duration is taken into consideration.

Growth in Wage-Earning Body.—One thing is certain—we can not ascribe this geographical distinction to any single reason. We have investigated whether it was a matter of more time being lost through other causes than “no job”; whether a matter of specialized industries, etc. It appears to partake of specialization but the evidence is not conclusive—at any rate this can not be the only cause. Let us make one more test, viz., examination of the growth in the wage-earning body between 1921 and 1931.

CXIV.—MALE WAGE-EARNERS 10 YEARS OF AGE AND OVER IN 1931 EXPRESSED AS A PERCENTAGE OF MALE WAGE-EARNERS 10 YEARS OF AGE AND OVER IN 1921, CANADA AND PROVINCES, 1931-1921

Province	Male Wage-Earners 1931 as P.C. of 1921
CANADA.....	138.1
Prince Edward Island.....	112.7
Nova Scotia.....	102.1
New Brunswick.....	104.9
Quebec.....	138.3
Ontario.....	128.6
Manitoba.....	133.2
Saskatchewan.....	140.5
Alberta.....	137.2
British Columbia.....	140.5

There is an undoubted negative correlation between this set of figures and percentage going back to work before June 1 of those losing time during the year, although there are not enough cases listed to measure the size of this correlation. What is interesting, however, is that the correlation between the growth in wage-earners and the liability to lose jobs is different from that with the ability to regain jobs once lost. In other words, the growth figure correlates independently with the two kinds of unemployment figures so that the multiple correlation with the two is higher than the simple with either one. Each of the unemployment figures has an independent valuation in so far as it depends upon the rate of growth of wage-earners. Consequently this growth enters very significantly into unemployment and the regions were widely distinguished in the matter of this growth.

What ingredients entered into this growth? (1) Wage-earners came in various numbers to regions in time of prosperity or boom; (2) they left in various numbers during the part of the depression that came before June 1, 1931. Localities to which they came in large numbers and failed to leave showed heavy unemployment in one form or another. Consequently the differentiation in regions in 1931 must have been very considerably a matter of differentiation in the degree in which the boom operated in various regions, but it must also have something to do with the mobility of the worker. This applies particularly to the form of unemployment, "inability to regain jobs." Where this form of unemployment is independent of mobility it must be dependent upon the versatility of the worker. To measure this versatility we would have to take a partial correlation between the ability to regain jobs and the diversification of occupations of the worker after rendering constant the mobility (i.e., the proportion of workers who had left the region between the boom period and 1931). This would be an exceedingly difficult task because of lack of data.

Employment Mobility.—We have a much better method of measuring the chances of regaining employment than the percentage of those losing time during the year who went back to work before June 1. This method is described in detail in Appendix 1. The figures we have just used involve the chance of losing jobs since the proportion idle on June 1 is a measure of this chance of losing the job. We need a measure of the difficulty or facility of going back to work independent of the chances of losing the job. This is really the chance of interchange between employment and unemployment during the year. In other words, it is a measure of the mobility in and out of employment, a different concept from mobility in and out of the locality. Let us refer to this as "employment mobility," e.g., let us suppose the measure of this mobility to be 2 and that the percentage of the year lost was 20 (the average for males in 1931). Then this 2 would tell us: (1) that the percentage losing no time was 64 and, of course, that the percentage losing some time was 36; (2) that the average number of weeks lost by those losing time was 28.9; (3) that the probable percentage losing the whole year was 4. If, however, employment mobility was 4 (instead of 2) and the percentage of the year lost was still 20, then we would have: (1) percentage losing no time 40.96, and percentage losing time 59.04; (2) average number of weeks lost by those losing time 17.6; (3) probable percentage losing the whole year 0.16. The measure of mobility for the different provinces in 1931 is shown in the following statement placed in juxtaposition to the growth in male wage-earners over the decade and the percentages regaining employment to show the correlation between them.

CXV.—INDEX OF EMPLOYMENT MOBILITY OF MALE WAGE-EARNERS 10 YEARS OF AGE AND OVER, RATIO OF 1931 WAGE-EARNERS TO 1921 AND THE PERCENTAGE OF THOSE LOSING TIME DURING THE YEAR WHO WENT BACK TO WORK BY JUNE 1, CANADA, BY PROVINCES, 1931

Province	Index of Employment Mobility	Male Wage-Earners 1931 as P.C. of 1921	P.C. Idle during Year Going Back to Work before June 1
Prince Edward Island.....	2.69	113.7	67.01
Nova Scotia.....	2.79	102.1	54.74
New Brunswick.....	2.83	104.9	52.78
Quebec.....	2.69	138.3	55.29
Ontario.....	2.55	128.6	56.37
Manitoba.....	2.24	133.2	44.08
Saskatchewan.....	2.19	140.6	41.31
Alberta.....	2.32	137.2	44.24
British Columbia.....	2.36	140.5	46.61

We see now a definite east to west trend in the mobility, from regions of greater to regions of less mobility. We also see a more definite correlation with the population growth over the preceding ten years, varying from 2.79 in Nova Scotia with the least increase in growth to 2.19 in Saskatchewan, one of the two with the greatest increase in growth. However, it is evident that growth is not the only factor. The index means something more than the percentage going back to work before June 1, because it recognizes duration of unemployment on the part of those losing time, independently of that condition of the rest of the wage-earners, e.g., Quebec and Ontario, by this index, are shown to be less mobile than the Maritimes.

The index of employment mobility measures something that ordinary employment data do not measure. The question remains as to whether it is the *mobility* (physical or geographical) or the *versatility* of the Eastern Provinces that make them less subject to remaining out of employment once the job is lost. It is a most important sociological question. Is employment mobility, regionally considered, determined by (1) the character of the people, (2) the nature of the industries situated therein, (3) considerations apart from either of these two?

The growth of the labour force as has already been explained, was introduced to show that either one of two things must have taken place: (1) a boom in the region with the result that a large body of wage-earners were attracted thereto; (2) after the boom and during the depression the unemployed workman had moved away to other fields of employment. The "other fields" could mean either another occupation or industry in the same locality or another locality. In either case it is mobility, but if it means another field in the same locality, it argues versatility. The workman is not specialized. He can do more than one thing. In the Prairies there is a specialization of work—agriculture as a business proposition; in central Canada there is industrialization; in the Maritimes there is lack of specialization except in certain spots. Knowing this we might say at once that the better position of the Maritimes was entirely due to absence of specialization and we would probably be right, but we can not be absolutely certain. In a statement of Chapter XI, borrowed from Volume I of the 1931 Census (see page 257), can be seen the number of occupations engaged in to a significant extent by different races of people. There we find the Scottish, Italian, Japanese and Hebrews among the most versatile, the Central Europeans, Eastern Europeans, Dutch and Chinese the least. This leads us to the character of the people and to wonder whether this has something to do with the situation in the Maritime Provinces with their strong Scottish and Irish bias, the Prairie Provinces with their Central and European bias, and British Columbia with its British and Japanese bias. Notice that this latter western province shows greater mobility than the Prairie Provinces in spite of its more rapid growth.

Rigidity.—It is desirable to investigate further the reasons for regional trend in the liability to remain unemployed once the job is lost. Here if anywhere we can get away from such pitfalls as peculiarities of classification, enumeration, etc., to which arrangements by occupations and industries are liable. A difficulty in the investigation arises from the fact that we have so few regional divisions—only nine provinces. We have also fifteen cities but the behaviour in cities is so different from that in the rest of their provinces that manipulation of figures to bring the two into line is almost impossible. As will be seen in the following statement the cities are much more rigid than the province as a whole. If regional liability to remain unemployed depended upon diversification of occupations alone one would expect the city to fare better than the rest of the province since the city is much more diversified. In the following statement the index of rigidity (or liability to stay out of employment) of each province and of each of the fifteen principal cities is shown in comparison with certain other features which might be expected to correlate with this rigidity. These features are: (1) size; (2) increase in wage-earners between 1921 and 1931, and (3) diversification of occupation. This diversification is measured by finding the average number of workers per occupation in the region and then taking the number of occupations in which the workers are represented by this average or more. Thus if there are 300 occupations listed in a city with 30,000 workers, the average number of workers per occupation is 100. If there are 30 occupations in which 100 or more workers are found this 30 is taken as the measure of diversification. It is a striking fact that diversification as thus measured is higher for regions than for immigrant races. It was mentioned in another place that the largest number of occupations represented by any immigrant race was 24 (Scottish). No city in Canada and only one province (Prince Edward Island) has a representation as small as this.

The number of different regions is not sufficient for a reliable multiple correlation between the index of rigidity and these three factors, but it seemed worth while working out such a correlation to ascertain the tendency of such regions as are represented. The fact that the cities showed greater rigidity than the provinces was puzzling considering their greater occupational diversification. Consequently it was at least interesting to see whether size had anything to do with it. In other words a city has, say, 300 occupations and a province the same number, but in the province these occupations are found repeated in different parts while in the city they are confined to a limited area. The same occupation in ten different parts of a province would really

be 10 occupation groups while in the city it would be only 1. This consideration alone indicates how little can be obtained from general averages from large aggregates and the need of a break up in any analysis of attributes.

The following statement is in two parts (1) by provinces, (2) by cities. With the index of rigidity are shown the three features described above. Even to the naked eye it is apparent that these features correlate with the rigidity but the measure of correlation from such a small number of cases would be meaningless. What seems to be most interesting is that when the provinces are taken by themselves a correlation is found and when the cities are taken by themselves it is also found; but the two sets are obviously heterogeneous and incapable of being correlated as one set. In spite of all the advantages of the city (save in rapid growth) it is more rigid than the whole province. It is suggested that the reason for this is that the occupation in the province is broken up into several localities whereas in the city there is only one locality. A question arises which for the present we are unable to answer: if, say, 30,000 workers were found in a city and another 30,000 workers were found distributed among ten localities with about 3,000 workers each; further if the city and the ten localities had the same occupational distribution would the worker in the city be more liable to remain unemployed once out of work than those in the ten localities? The indicated answer is "yes," but for the present we can not prove it.

CXVI.—NUMBER OF MALE WAGE-EARNERS AND NUMBER PER 100 IN 1921, SHOWING INDEX OF RIGIDITY AND NUMBER OF MALE OCCUPATIONS OVER AVERAGE SIZE, CANADA, BY PROVINCES AND CITIES OF 30,000 AND OVER, JUNE 1, 1931

Province and City	Index of Rigidity (male wage- earners)	Male Wage-Earners		Male Occupations over Average Size
		In 1931 (000's)	In 1931 as P.C. of 1921	
(1) Province—				
New Brunswick.....	2-63	66	105	32
Nova Scotia.....	2-79	95	102	41
Quebec.....	2-69	535	138	54
Prince Edward Island.....	2-69	9	113	16
Ontario.....	2-55	753	128	53
British Columbia.....	2-36	198	141	66
Alberta.....	2-32	116	137	31
Manitoba.....	2-24	133	133	47
Saskatchewan.....	2-19	116	141	24
(2) City—				
Halifax.....	2-67	15	106	56
London.....	2-67	19	121	63
Saint John.....	2-64	12	104	45
Montreal.....	2-60	224	152	62
Quebec.....	2-52	30	151	53
Hamilton.....	2-47	44	142	61
Toronto.....	2-41	176	134	72
Ottawa.....	2-37	31	124	58
Calgary.....	2-26	25	159	61
Edmonton.....	2-22	21	162	59
Windsor.....	2-19	18	163	60
Winnipeg.....	2-12	63	136	72
Vancouver.....	2-07	77	231	64
Regina.....	1-99	15	167	56
Victoria.....	1-92	12	113	55

CHAPTER X

RACIAL ORIGIN IN RELATION TO UNEMPLOYMENT

Introduction.—The subject of this chapter has been discussed incidentally in many of the other chapters of this monograph and treated in considerable detail in a monograph *Racial Origins and Nativity of the Canadian People* by Prof. W. B. Hurd. In the present chapter, therefore, it seems sufficient to collect and pass in review the findings already discussed.

In Prof. Hurd's analysis the unemployment by race was shown in relation to characteristics apparently non-racial which these different races displayed, as concomitants of their degree of unemployment—age, year of arrival, occupation, etc. When allowance is made for these non-racial concomitants it would seem that there is little or no unemployment that can be associated with race as such. Of course the fact still remains that there are wide differences in the degree of unemployment shown by one race as compared with another, and when such differences can be associated with the occupational difference it is impossible to say whether the unemployment is due to the race or the occupation. The negative findings do not prove that there is *no* racial distinction. Why should one race differ from another occupationally? The answer first occurring to one is "original habitat," but this is almost exactly what we mean by race in the census, *original* being stressed as distinguished from country of last permanent residence. Many of the races come from several countries and yet members of those races representing different countries of birth or emigration show common characteristics in the matter of occupation and (closely connected with occupation) distribution over the country. In an atlas of the Prairie Provinces* by Prof. Hurd and Dr. Grindley it is not difficult to see that races are differentiated by these very characteristics. As subtle a differentiation as that between Russians and Ukrainians can be detected by the practice of Russians to settle along railways and of the Ukrainians to settle in mixed farming districts—both true to original habitat. Now when we have similarity of occupation in the case of the same race coming from different countries and dissimilarity in the case of different races coming from the same country it is difficult to dissociate these from racial characteristics.

Mobility.—However, we will discover one feature of unemployment in Chapter XI that seems to be more directly connected with race than other features. In that chapter a measure of mobility in and out of employment (developed in Appendix 1) will be applied to different immigrant races by year of arrival in Canada. This index measures the ease or difficulty with which the wage-earner can re-enter employment once he is unemployed (probably it also measures the ease or difficulty with which a person can secure a job for the first time). Now when the immigrant races are classified by means of this index and cross-classified by the usual unemployment percentage (i.e., by the liability to be thrown out of employment) it is found that there is a considerable racial difference. There is, for example, a wide separation between Hebrews and Eastern and Central Europeans although both came from the same countries; there is a wide difference between Japanese and Chinese (see Statement CXXI, Chapter XI). We can not associate this with year of arrival, because allowance has already been made for this. When we remember that what we are trying to measure is difficulty in securing employment when unemployed, it looks as if language had something to do with it, but from the statement referred to it is obvious that this is not the only reason.

Specialization.—Races do not seem to be so much diversified in occupation as they are in the extent to which they specialize in occupations. From a statement† also in Chapter XI it will be seen that the race which represents the greatest number of different occupations is the

* *Agriculture, Climate and Population of the Prairie Provinces of Canada*. Dominion Bureau of Statistics. King's Printer, Ottawa.

† p. 257; borrowed from 1931 Census Vol. I, p. 294.

Scottish and the least the Dutch although the Japanese come very close to the latter. And yet the Japanese are the most mobile in employment. This would also seem to indicate that the differentiation in unemployment status is not entirely occupational.

Again, in the 1931 monograph *Illiteracy and School Attendance* the earnings and other concomitants of unemployment are shown to be associated with illiteracy and illiteracy is closely associated with race.

It is only by taking one by one the features of unemployment commonly associated with race and showing that each is *not* due to anything else that it could be proven that there is a *racial* differentiation, and obviously this is impossible. As it is, the fact that there is another possible explanation does not prove that there is *not* a racial differentiation. The question is open. Meanwhile there is no doubt whatever that features of unemployment *are* associated with race whether these are "racial" or not. Among these features are: (1) liability to be thrown out of work; (2) liability to staying out of work once the job is lost; (3) different rates of earnings; (4) different sizes of families with the attendant implications; (5) different degrees of earning-power of the members of these families; (6) different proportions of these families earning; (7) differences in the main occupation followed; (8) differences in the number and variety of occupations followed indicating different degrees of versatility. This list could be extended but it seems sufficiently long. Chapter XI points to the suggestion that if there is a "racial" differentiation in unemployment it is along the lines of different degrees of versatility.

CHAPTER XI

PROBABILITY OF CONTINUOUS EMPLOYMENT IN RELATION TO SEASONAL AND OTHER FLUCTUATIONS

Introduction.—The main objective of this chapter is to show the principles behind fluctuations in the year's unemployment and to classify industries, occupations, etc., in terms of strength or weakness as based upon both their liability to unemployment and the nature of their unemployment from the point of view of these fluctuations. For purposes of this classification a method has been developed in Appendix I so that it will not be necessary here to enter upon the details of this method. The method itself has been developed from the behaviour of unemployment as shown in other chapters of the monograph, particularly Chapters III and IV.

Fluctuation Type.—"Seasonal" fluctuations in employment involve many different concepts. An industry may be seasonal in the sense that the work is slack in the winter and active in the summer, usually with a low month or week in the slack and a high in the active seasons and with the other months fairly evenly graduated in chronological order between these extremes. This is the usual concept of "seasonal" in Canada. There are, however, other concepts, e.g., strawberry picking is seasonal, its season being confined to one month; logging in the East has its high point in the winter, and probably in the summer in British Columbia. Then there are other industries with possibly several seasons. In so far as this is true this chapter may be regarded as one on seasonal fluctuations, because most of the fluctuations discussed are really seasonal. However, there are some fluctuations (within the year) coming under observation which can not be regarded as seasonal. When employment is on a downward trend (or an upward) some industries respond to it in a different manner from others. (1) For example, an industry may let off its men very gradually responding faithfully to the trend; in its case there are no fluctuations, seasonal or otherwise. (2) Another industry may let off its men in a series of steps—holding on to them as they were at the beginning of the year for two or three months, then dropping a large number; then holding on to the remainder for another two or three months and dropping some more, and so on till the end of the year. During the year it may have dropped the same number as the first-mentioned (gradual) industry, but it has shown, not fluctuations in the dictionary meaning of the term, but irregularities which are measured by a foot-rule called standard deviation, this standard deviation being higher than shown by the first mentioned. (3) Still another industry, which drops the same proportion of its men as the other two in the course of the year, may drop them all at once and retain the remainder the rest of the year. This industry shows the highest standard deviation of all three. (4) The true "fluctuation" is the case where an industry drops some men, later takes on some more, still later drops some more and so on. This industry may or may not have a higher standard deviation than the third mentioned industry but the deviation has a different cast. It may exist where there is no downward or upward trend.

However, we are not concerned with this type of variation because we are taking the trend, not chronologically but as a differential from the high to the low point. Having this in mind we can see that while theoretically there is a possibility of no downward trend, actually there is no possibility. As a matter of fact the smaller the downward trend the smaller the standard deviation is likely to be and the greater the number of interchanges.

Classification.—From our observations on the unemployment situation in 1931, industries of type 3 are apt to show similar characteristics throughout different degrees of unemployment from the fact that they show the same relationship of standard deviation to trend. The only way in which we can distinguish them is according to the percentage unemployment shown. On this assumption we can classify them by arranging them in order from those showing the least to the greatest unemployment, keeping the relation between the standard deviation and the trend constant.

On the other hand, by keeping the percentage unemployed (or employed) constant we can assume that there is a graduation according to the relationship of standard deviation to trend and classify them according to the various degrees of the relationship, *i.e.*, the number of changes during the year.

The reasoning underlying the latter classification and the demonstration of its validity are treated in detail in Appendix 1. In this chapter attention will be confined to its significance. Take the case of an industry (or provincial, or age, or race, or occupation) group that shows throughout the year an average of 5 p.c. unemployment or 95 p.c. employment. This means that the workers as a whole in this industry lost 2.6 weeks and worked 49.4. So far as the industry is concerned it probably would not matter much how these weeks were lost or who lost them. In their accounting and setting a money value to them, the loss would be a definite amount except, of course, that it would be more serious to lose them at one part of the year than another and among the most necessary part of its staff than its least necessary. However, this is not likely to happen because of other considerations. The industry in all probability would lose the work of the least necessary and poorest paid of its staff and the loss would happen at the time when its work was ordinarily slack. From the point of view of the workers, on the other hand, it makes a vast amount of difference by whom and how these weeks were lost. If the loss were equally distributed among them it would mean that everybody worked 49.4 weeks in the year. The individual simply had two weeks holidays without pay. If only 5 p.c. lost any time during the year it would mean that this 5 p.c. lost 52 weeks, *i.e.*, did not work at all. If the 5 p.c. were evenly distributed among the workers of all rates of pay, it would mean very little hardship for those paid well enough to leave a margin over the year's expenses, and the hardship would be confined to those with sub-marginal pay. If it were confined to say the lower half or third it would have the effect of reducing a large number of the super-marginal to sub-marginal. Take the case where it was confined to the lower half, it would mean 5.2 weeks unemployment for this half. If the upper limit to their year's earnings were \$1,000 (about the average in 1931 for all wage-earners), it would have the effect of reducing this to \$900 so that this half were scaled down from the \$900. The wages for all this half would be reduced by \$8.50 a month. All persons in this lower half of the earnings range are usually living so close to their earnings that this reduction would mean a drastic change in the mode of living of every one of them. Moreover, we must remember that we are talking of a year of only 5 p.c. unemployment, not of a "bad" year but of a very "good" year.

It would also make a difference *when* these persons lost their 5.2 weeks—did they lose them all at once or was their loss scattered throughout the year? Did their loss occur in the winter season when they are apt to be unemployed or in the summer season when they are usually employed? A person, however unthrifty, makes *some* kind of adjustments to meet his ordinary expectations. When these expectations are tampered with a certain amount of unemployment may mean a loss out of all proportion to what the same amount would mean had it been more or less anticipated.

Periodicity.—In the classifications in this chapter an attempt is made to recognize these factors. Taking the case of the class which shows 95 p.c. employment, this class is subdivided so as to show varying degrees of what we may call "periodicity" of employment or unemployment. This periodicity is designated by numbers 1, 1.5, 2, 2.5 and so on, according to the number of changes in the year undergone by the industry, occupation, etc., and in the statements is called "index of mobility." The industry which shows only one change probably throws out the men (suffering from any unemployment) all at once. If it threw them out at the beginning of the year this would be reflected in a higher percentage of unemployment for the industry as a whole; if it threw them out at the end the reflection would be a lower so that we can not have these possibilities since the class has constantly 95 p.c. employment. Keeping the employment class constant through varying degrees of periodicity, therefore, shows differences which do not involve possibilities such as that of one throwing them out at the beginning, another at the end and so on.

If there are two industries in the 95 p.c. employment class and one shows 1 change in the year and another 4, which of these two industries is the more favourable to the worker? We have seen that the industry which shows only 1 change, *i.e.*, throws them out all at once, confines its unemployment to a certain fraction of its workers leaving them a long period

unemployed. It is the type of industry which creates the drastic situation already described. The industry which shows 4 changes is spreading its unemployment among its workers. Within the limits of the 5 p.c. unemployment for the whole body of workers it is mitigating the circumstances of the individual by preventing his relegation from the super-marginal to the sub-marginal class. There would seem to be no fallacy in this reasoning. It is in a sense providing part-time work for all instead of providing full-time work for some. In this connection and following from the derivation of the basis of classification, let us hypothesize two industries each with 1,000 workers. The one has 5 p.c. unemployment and only 1 change, the other has 4 changes (and not necessarily the same percentage unemployment). Now a certain number of workers in the first industry is idle the whole year (unless they worked in some other industry later)—say 50; what percentage unemployment in the second industry would leave the same number out of work the whole year? Let us assume that q is the percentage. Supposing $q^4 = 0.05$, then $q = 0.47$ and the answer is that it would take 47 p.c. unemployment in the whole of the second industry to leave as many unemployed the whole year as the 50 in the first industry. However, in the second industry only the fourth power of 0.53 or 7.9 p.c. would be working the whole year, i.e., would lose no time. Now there were some industries in 1931 that on the whole lost as much as 47 p.c. or near it, but very few. Consequently the industry with only 5 p.c. unemployment and only one change would be as hard on some of its workers as the very weakest industry in Canada in 1931. If it had undergone 2 changes instead of 1 there would have been less than 3 men losing the whole year; if it had undergone 3 changes there would have been only 1 man out of 8,000 losing the whole year; if it had undergone 4 changes there would have been only 1 man out of 160,000 losing the whole year. The figures are not quite this definite as some individuality has to be allowed, but they are a very close approximation.

The effect of such an industry with a small percentage unemployed and only 1 change is obviously to shift the responsibility for re-employing its men upon some other industry or to throw them on relief. Probably one reason why their percentage unemployment is low is because they have thrown them out near the beginning of the year and those thrown out reported to the census under some other industry, or no industry.

It is seen, therefore, that the classification by periodicity is a highly important one. Our next step will be to give this double classification by different types of worker groups.

1. Main Occupation Groups by Sex.—This classification is shown in Statement CXVII. The sexes are shown separately by occupations. It is clear that the females show greater diversity than the males. We may look at the comparison as one in which we appraise the chances of regaining employment once it is lost. Those in the first vertical class find it most difficult and those in the last vertical class least difficult to regain employment. Those in the top horizontal class are the least apt to lose a job once they have it and in the bottom the most apt. The average female is less apt to lose the job than the average male but she has the same difficulty in regaining it once it is lost. This is purely a result of occupational distribution. When we take the sexes, occupation by occupation, we find striking differences. The female professional and agricultural show greater rigidity, i.e., find it more difficult to regain employment than the male. On the other hand the females in transportation, building and construction, fishing and logging, unskilled labour and especially manufacturing find it much easier to regain employment. That this is due to the greater diversity of industries in which most female occupations are found is easily seen when we take such a female occupation as telephone operator. On the other hand female professional service covers a very narrow range of occupations; education absorbs about 58 p.c. of the group, while health absorbs almost 27 p.c.

The direct significance of the vertical classification is, of course, the fact that on the extreme left changes in employment status—i.e., transfer from the employed to the unemployed class—take place infrequently and on mass scale; on the extreme right, frequently and in small proportions. The further to the right, the less distinction there is between the employed and unemployed classes and the more likely the worker is to find himself or herself in one category to-day and in another to-morrow. On the whole, the female is less definitely divided into the two classes than the male.

Taking now the occupations themselves and confining attention to the males, we find in general that the greater the unemployment the less the rigidity or periodicity. However we

find personal service and transportation and communication in the same percentage employment class but with considerable difference in rigidity. Personal service is apt to suffer unemployment infrequently but in large proportions, regaining employment with difficulty; in transportation and communication the individual is just as apt to lose some time as in personal service but he loses less time—unemployment is better spread among the workers. That this is due partly to the variety of occupations included under transportation and communication is undoubtedly true, but it will be seen in Statement CXXII that when this main occupation is broken up into its parts the same is true of the parts.

It is rather striking to find two such widely different occupations as transportation and communication and logging in the same rigidity class differing widely however in exposure to some unemployment; similarly two such occupations as professional service and agriculture. This gives us a line on the characteristics of seasonal unemployment, which can be studied better in connection with the homogeneous occupation groups in Statement CXXII than with the main groups as here shown. The seasonal occupation seems to have varying degrees of rigidity—contrast, agriculture and mining and quarrying. It would seem that seasonal occupations differ from other occupations only in their greater liability to loss of time in the occupation as a whole, *i.e.*, of the individual being thrown out of a job. When it comes to distinction between individuals we find seasonal occupations varying widely, but we can not say as yet whether this is due to the stages of development of these seasonal occupations. Taking the agricultural labourer and the professional—the only reason why an individual suffers less unemployment during the year in the latter than in the former is because the occupation as a whole loses less time. On the other hand, taking the agricultural worker and the miner—the average individual in the former loses less time than in the latter because the occupation as a whole loses less time, but the individual losing time loses more time than in the latter because when he does lose time he is apt to lose a great deal of time. In fact if we took an unemployed agricultural worker where the chances of the occupation as a whole to be idle on a certain day was 1/20 and an unemployed miner where the chances of the occupation as a whole to be idle on a certain day was also 1/20, the individual agricultural worker would be three and a third times as apt to lose the whole year as the individual miner.

Another way in which the lateral classification may be looked at is as a gradation from least to greatest mobility (left to right). The statement affords a means of assessing occupations from this point of view. There is no doubt that the occupation in which the worker can move freely out of and into employment is more mobile than that where he has to stay either in or out. If the occupation is at the same immobile as shown by its lateral classification and subject to heavy unemployment as shown by the vertical, that occupation is in a bad position. Notice from this point of view the position of labourers. We do not realize that there is any tendency to immobility in their case because in 1931 it was about average. If, however, we compare 1931 with 1921 we find that the immobility has moved $5\frac{1}{2}$ intervals to the left (of the classes shown above, *i.e.*, from 3.9 to 2.5). How much this means may be judged from the fact that a labourer unemployed in 1921 had thirteen times as many chances of regaining employment within the year as the labourer unemployed in 1931. A small difference in the lateral intervals from left to right means a very considerable difference in mobility.

2. Main Industry Groups by Sex.—Statement CXVIII shows the main industries cross-classified by what as already explained in connection with Statement CXVII are (a) the chances of the worker losing his job (vertical column) and (b) the chances, when it is lost, of regaining it (from right to left lateral column). The groups are so heterogeneous that detailed discussion is postponed until there is opportunity to bring under review homogeneous industry groups as in Statement CXXII. However, a few general observations may be considered.

We find finance and insurance in the most rigid class, *i.e.*, although the chances of holding a job once one has it are greater than in the others, the chances of regaining it once it is lost are very small. In other words, the mobility between the employment and unemployment status is very small. Next considering two industries giving equal chances of holding the job, *viz.*, agriculture and transportation and communication, we find the chance of regaining it during the year once it is lost is greater in the latter. In other words, the agricultural labourer is taken on only at one or two periods in the year. Examining two industries in the same mobility class—electric light and power production and distribution and construction, the chance of losing the job is seen to be much greater in the

latter than in the former. Finally, we have manufacturing where the mobility is greatest of all, but manifestly because "manufacturing" covers such a great variety of industries. Statement CXXII will show how manufactures differ among themselves.

The group of industries designated as "unspecified" occupies a remarkable position. In the case of males it is composed almost entirely of unskilled labourers; in the case of females of typists and stenographers. Now why should the stenographers, not attached to any industry, be less mobile than those attached (*cf.* Statements CXVII and CXVIII)? It is a striking fact that strong attachment and non-attachment show the same degrees of immobility. Of course this could happen if the non-attached were the discards of strongly attached. Notice in all the statements so far the immobility of what are obviously the bad classes—and then see from Statement CXIX the types of ages that are in the immobile classes, the very old and the very young.

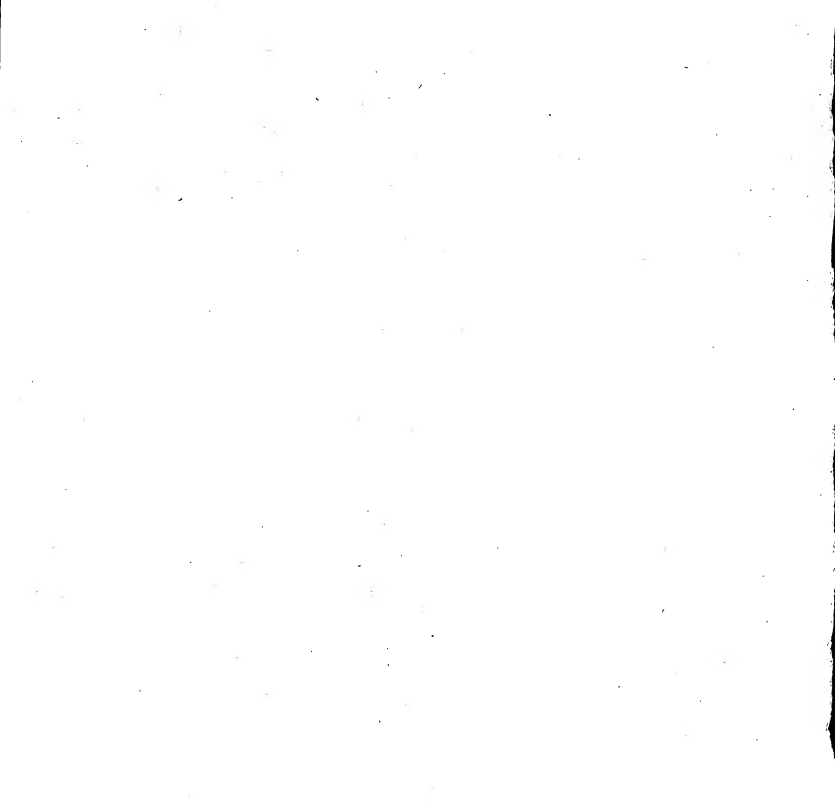
3. Main Age Groups.—Statement CXIX shows the same sort of classifications as the previous statements only this time placing the age groups under review. If the interpretation of the classification is clear by this time, we can dispense with further explanation and call the lateral intervals from right to left a gradation from mobility to rigidity *into* and *out of* employment, while from top to bottom we have a gradation of the chances of losing a job once it is held. It is clearly seen that the lateral gradation is one from the most fit to the least fit ages. The oldest and youngest are together on the extreme left. This is easily understood since we know that these extreme ages are selected, because, in the case of the young, most have not yet entered employment and are not counted, while in the case of the extremely old, many have retired and likewise are not counted. This also explains why the 10-13 males are nearer the top than the other ages. The chief significance of what thus happens to the extreme ages is in providing us with a lead as to why the rigid industries show low degrees of unemployment, *i.e.*, are near the "top". It is because they have undergone a process of *contraction* either by discarding their unemployed for so long a period that these do not consider themselves as any longer attached to the industry, or by failing to take on additional wage-earners.

The most significant feature of this age classification is the position of the 18-19's and 55-64's. Neither of these age groups is, or, at any rate, should be, influenced by retirement or failure to enter. There was a time when the young man of 18 was married, and it is still true that the man of 55-64 has family dependents. Not only are these at the foot of the vertical classification but they are in the second worst class of rigidity, which forces our attention upon these ages. Looking over the age distribution of the Canadian population we see that the 55-64 group is certain to increase very rapidly in number during the next twenty years while the same is true for some time to come of the 18-19 group—both of them much faster than the population as a whole. This makes retirement at ages under 65 almost an impossibility. And yet we have the situation that in 1931 a person of 18 or 60 who once lost his job had 2·4 times as many chances of remaining idle the whole year as the man of 45, while he had more than 1·05 times as many chances of losing his job when he had it. If he had a job at \$1,000 a year his prospects, counting on that wage for the whole year, would be only 67 p.c. as good as that of the man of 45. The 19-year-old has prospects of improving his present condition, but the 60-year-old has not. And yet he is at the best years of his life because if he does hold a job he is getting as much as or more than the man of 45. Even in active war service the man of 60 is the high command. The age group 20-24 is superior to the 19's and 60's in mobility only but this is a very important form of superiority.

4. Provinces by Sex.—Statement CXX shows mobility by provinces. It is obvious that there is decreasing mobility from east to west in the case of both sexes, except that British Columbia and Alberta with their more diversified industries are more mobile than Manitoba and Saskatchewan in the case of the males which, of course, is the sex with the bulk of the wage-earners. The position of the Maritimes can be judged best by comparing the different statements. This of course is true of any of the features of these mobility statements. One can interpret them only by comparison. So far we find the extreme ages, the unspecified industries and the Prairie Provinces in the least mobile classes, together with industries and occupations which show a low degree of unemployment and great permanency among the staff.

CXVII.—CLASSIFICATION OF WAGE-EARNERS IN THE MAIN OCCUPATION GROUPS, BY INTERVALS OF PERCENTAGE OF YEAR WORKED, MOBILITY
 INDICES AND SEX, CANADA, YEAR ENDED JUNE 1, 1931

[illegible]



CXVIII.—CLASSIFICATION OF WAGE-EARNERS IN THE MAIN INDUSTRY GROUPS, BY INTERVALS OF PERCENTAGE OF YEAR WORKED, MOBILITY INDICES AND SEX, CANADA, YEAR ENDED JUNE 1, 1931

[illegible]

CXIX.—CLASSIFICATION OF WAGE-EARNERS IN AGE GROUPS, BY INTERVALS OF PERCENTAGE OF YEAR WORKED, MOBILITY INDICES AND SEX, CANADA, YEAR ENDED JUNE 1, 1931

MALES				
P.C. of Year Worked	Index of Mobility			
	2-00-2-25	2-25-2-50	2-50-2-75	
86 and under 88.....	10-13 years			
84-86.....				
82-84.....	14-15 years			
80-82.....			35-44 years 45-54 years	
78-80.....			25-44 years All ages	
76-78.....	16-17 years	55-64 years 18-19 years	20-24 years	
74-76.....	65-69 years 70 years and over			
FEMALES				
P.C. of Year Worked	Index of Mobility			
	2-00-2-25	2-25-2-50	2-50-2-75	2-75-3-00
94 and under 96.....		70 years and over		
92-94.....				
90-92.....	10-13 years 65-69 years	55-64 years	35-44 years 45-54 years	20-24 years 25-34 years
88-90.....			All ages	
86-88.....			18-19 years	
84-86.....	14-15 years			
82-84.....		16-17 years		

CXX.—CLASSIFICATION OF WAGE-EARNERS IN PROVINCIAL GROUPS, BY INTERVALS OF PERCENTAGE OF YEAR WORKED, MOBILITY INDICES AND SEX, CANADA, YEAR ENDED JUNE 1, 1931

MALES

P.C. of Year Worked	Index of Mobility			
	2-00-2-25	2-25-2-50	2-50-2-75	2-75-3-00
90 and under 92.....			Prince Edward Island	
88-90.....				
86-88.....				
84-86.....				
82-84.....				
80-82.....	Saskatchewan		Quebec Ontario	
78-80.....		Alberta	Canada	New Brunswick Nova Scotia
76-78.....	Manitoba			
74-76.....				
72-74.....		British Columbia		

FEMALES

P.C. of Year Worked	Index of Mobility			
	2-00-2-25	2-25-2-50	2-50-2-75	2-75-3-00
94 and under 96.....		Prince Edward Island		
92-94.....			Nova Scotia	
90-92.....				Quebec New Brunswick
88-90.....	Saskatchewan	Manitoba Alberta	Canada	Ontario
86-88.....		British Columbia		

5. **Immigrants by Racial Groups and Year of Arrival.**—Statement CXXI has probably the most human interest of the statements in this chapter. In regard to mobility it shows a number of striking facts. We find the Chinese and Japanese at opposite poles, so to speak, the former being the least mobile. The Italians and Hebrews are among the most mobile classes; the Central Europeans among the least. The British are naturally average since the index of mobility is strongly influenced by the population composing the greatest proportion of the wage-earners and the British immigrants are of the same race as this dominant population. What is significant here is the position of the other races in relation to the British, as well as their position in the lateral columns in relation to other classes shown in the other statements. The year of arrival seems to have some slight bearing upon mobility, the year 1930-31 being the least mobile. With this exception, however, the older immigrants tend to be less mobile than the newer, probably because of more specialized occupations. It would seem that the position in this statement is strongly connected with the diversity of occupations. This can be seen by reference to the short statement immediately following reproduced from Volume I of the 1931 Census* and showing the number of occupations out of 30 considered, in which different races are represented in proportions greater than their own races in all occupations. Here also it shows the Japanese and Chinese far apart.

NUMBER OF OCCUPATIONS IN WHICH THE VARIOUS RACES HAVE THEIR SHARE OR MORE OF GAINFULLY OCCUPIED MALES, CANADA 1931

Racial Origin	Number of the 30 Occupations Listed	Racial Origin	Number of the 30 Occupations Listed
Scottish.....	21	Eastern European.....	6
English.....	20	German and Austrian.....	5
Italian.....	18	Other Central European.....	5
Irish.....	14	Scandinavian.....	5
Hebrew.....	13	Chinese.....	4
French.....	11	Indian.....	3
Japanese.....	10	Dutch.....	2

It is clear from this list that causes other than diversity of occupations are also influential. These causes may be very numerous, but certainly include age, year of arrival of the immigrant portion, etc. There is little doubt for instance, that one strong reason for the position of the pre-1911 arrivals is age. The youngest of these in 1931 would be around 40 so that the average would probably be in the age categories which, as shown in Statement CXX, are very rigid.

6. **Occupations of the Sample.**—Statement CXXII shows the mobility in and out of employment by occupation groups. It is in this statement and Statement CXXIII on industry groups that the full force of the classification can be seen, although the previous statements are useful aids to interpretation of these two. In considering Statement CXXII continual reference should be made to Chapter IV on occupation to which this is supplementary.

We notice that the occupation, "Foremen and inspectors—steam railway", Ont., comes in as the extreme of mobility and "Accountants and auditors", Que., as the extreme of rigidity but teachers come very close. Remembering that both extremes in this case lose very little time on the whole, it is easy to interpret their position. Railway foremen and inspectors take holidays without pay and take them at different parts of the year. This time is counted as unemployment. The average number of weeks lost by the whole occupation is about 2.4 or very little more than their holidays. They are, therefore, extremely mobile, because to the extent that they move out they move in again in less than three weeks. On the other hand, within the year the mobility of teachers is normally confined to one date, viz., the beginning of the year in such schools as hire teachers then. There is, however, another form of mobility, particularly apparent in the Prairie Provinces. The teachers are hired on an annual salary but in cities they receive a monthly cheque to the amount of one-tenth of this salary, so that they are paid in full by the end of the school year. It is impossible to convince some of these teachers that their two months vacation is not unemployment. The cases of these two occupations help to interpret the other cases. Lack of mobility

* Op. cit. chap. XVII, p. 294.
59062—17

arises from infrequent and large changes between unemployment and employment, increase in mobility by frequent and small changes. This, of course, is true to the definition, but these cases show the process actually at work.

On the whole we see that mobility slows up from east to west, as has already been noted. It explains why the same occupation group is more mobile in some provinces than another. It is clear that this is connected with seasonality, especially in the sense of summer and winter seasons. True to the definition seasonality slows up mobility—it causes large changes at infrequent periods. This throws into the same mobility classes types of occupations which seem at first sight to be widely different. They are widely different in their liability to be thrown out of work, but it is a question whether they are not intrinsically, as well as apparently, similar in their liability, when thrown out of work, to remain out a long time. We also see that the cyclical occupations, such as construction, are very immobile. The odd companions—scamen, sailors, and deckhands and such occupations as bookkeepers and cashiers—are in the same class for different reasons, the former because of seasonality, the latter because of the difficulty in entering the occupation. The steady forms of employment maintain permanent staffs, but through their very permanency their numbers are limited and it is very difficult for any new member to enter; the seasonal increase their staff at one season but when the season is over the would-be-entrants have to wait six months for another season; the cyclical have to wait until another cycle if they wish to re-enter the same form of employment. Now what types are left to the mobile class? We have already seen that they are types analogous to the railway men who take leave without pay; in other words they are workers who are subject to short periods of unemployment a small number at a time. Among these are the occupations and industries which at slack times retain full staffs and give them part-time work. At first sight it seems startling to find among the mobile classes such occupations as coal miners (not other miners), carpenters and Quebec longshoremen and stevedores. When the reasons are examined it will be seen how excellently this form of classification suits. Taking first the case of coal miners, it will be noticed that they are among the worst in subjectivity to unemployment—i.e., they were extremely subject to be thrown out of employment, but at the same time they were very mobile, i.e., found their way back with ease. We have direct data to explain this. The unemployment of 1931 was given by causes—no job, temporary lay-off, etc. When temporary lay-off was a large cause it meant that the men were getting back into employment; otherwise, with no jobs where they were detached from their industry. Now coal miners compared with other mining and all occupations in the percentage of those losing time who gave temporary lay-off as a cause as follows: coal mining, 70 p.c.; other mining, 20 p.c.; all occupations, 19 p.c.

This is conclusive. It is not the reason in the case of longshoremen and stevedores where the percentage was less than one-half of 1 p.c., being small also in other provinces, but they are a notoriously unselected class. What work they do get is just as apt to fall to the lot of one man as another. They are continually passing in and out of jobs. The case of carpenters is illuminating. In the Maritimes they are mobile; in the Prairies, immobile. This is one of the cases where we can see a decided distinction between occupation and industry. The industry, construction, is immobile because it is cyclical. In the Prairies there was a tremendous movement in building when sod houses were being replaced by frame or when small towns and cities were springing up over night. This state is apt to continue a number of years after the immediate "boom" is over, but it is sure to come to an end as "newness" disappears. In the Maritimes, an old country where this expansion in building had not taken place, the carpenter does all sorts of things besides building. In building he probably repairs more than he builds. The number of carpenters is apt to be more nearly commensurate to the constant demand than where a large element is transferred into carpenters over night and report themselves carpenters in the census. The carpenters in the Maritimes move into and out of employment. In Saskatchewan about 67 p.c. of the carpenters losing time in building and construction lost between 25 weeks and the whole year; in Nova Scotia less than 38 p.c. lost this much. We can take such an occupation as cooks in British Columbia which is very immobile. In Statement CXXI we find the Chinese to be also very immobile. Of course we can not argue that cooks are immobile because they are Chinese and at the same time that Chinese are immobile because they are cooks, but in some way the two seem to be associated. Again take printers and compositors in Ontario. They have greater than average mobility. By looking up the causes of unemployment we find a

CXXI.—CLASSIFICATION OF MALE IMMIGRANT WAGE-EARNERS ACCORDING TO RACIAL ORIGIN
AND YEAR OF ARRIVAL, BY INTERVALS OF PERCENTAGE OF YEAR WORKED AND OF
MOBILITY INDICES, CANADA, YEAR ENDED JUNE 1, 1931

Index of Mobility

P.C. of Year Worked	1-50-1-75	1-75-2-00	2-00-2-25	2-25-2-50	2-50-2-75	2-75-3-00	3-25-3-50
94 and under 96					Japanese (1930-31)		
92-94							
90-92							
88-90							
86-88		Chinese (1921-25)				Japanese (1926-29)	
84-86		Indian (1921-25)		British (1930-31)		Dutch (1930-31)	Japanese (1921-25)
82-84				French (1930-31)	British (1926-29) British (1911-20) British (before 1911)	Hebrew (1930-31)	Japanese (1911-20)
80-82					Scandinavian (1930-31) French (1926-29) British (1921-25) Dutch (1921-25) French (1921-25) Dutch (1911-20)	Hebrew (1921-25)	
78-80				Other races (1921-25) Male immigrants, all races (1911-20) and (before 1911) Dutch (before 1911) Hebrew (before 1911)	Dutch (1926-29) French (1911-20)	Hebrew (1926-29) French (before 1911)	
76-78				Other races (1926-29)	Male immigrants all races (1921-25) Hebrew (1911-20) Japanese (before 1911)		
74-76	Chinese (1911-20)		Male immigrants, all races (1930-31)	Other races (1911-20) Other races (before 1911)	Indian (1911-20) Scandinavian (1911-20)		
72-74				Central European (1911-20) Central European (before 1911) Scandinavian (before 1911)	Scandinavian (1926-29)		
70-72			Other races (1930-31)	Male immigrants, all races (1926-29)	Italian (before 1911)	Italian (1921-25) Italian (1911-20)	
68-70	Chinese (before 1911)				Scandinavian (1921-25)	Italian (1926-29)	
66-68				Central European (1921-25) Eastern European (before 1911)		Indian (before 1911)	
64-66			Central European (1930-31)	Eastern European (1921-25) Eastern European (1911-20)			
62-64			Central European (1926-29)				
60-62			Italian (1930-31)				
58-60				Eastern European (1926-29)			
56-58			Eastern European (1930-31)				

Index of Mobility												
No.	P.C. of Year Worked	1-75-2-00	2-00-2-25	2-25-2-50	2-50-2-75	2-75-3-00	3-00-3-25	3-25-3-50	3-50-3-75	3-75-4-00	4-00-4-25	4-25-4-50
1	98 and under 100.....		Chrymies and priests—Que. School teachers—Que.		Managers—wholesale firms—Ont. Chrymies and priests—Ont. School teachers—Ont. Officials—Finance—Ont.		Public service officials—Que.			Postmen and mail carriers—Ont.		
2	99-98.....				Public service officials—Ont.	Police, detectives—Ont. Managers—retail stores—Ont.	Police, detectives—Que. Managers—retail stores—Que. Farm labourers—P.E.I.					
3	94-90.....		School teachers—Sask.	Insurance agents—Que. Insurance agents—Que.	Janitors, sections—Que. Janitors, sections—Ont.	Purchasing agents and buyers—Sask.						Foremen and inspectors—steam railway—Ont.
4	92-94.....	Accountants and auditors—Que.	Sales agents, canvassers and demonstrators—Ont.	Office clerks—Alta. Commercial travellers—Ont.	Saloonmen—N.S. Civil engineers and surveyors—Ont. Office clerks—Sask.	Saloonmen—N.B. Office clerks—N.S.	Office clerks—N.B.			Locomotive engineers—Ont.		
5	90-92.....				Telegraph operators—Ont. Domestic servants—Que.	Designers and draughtsmen—Ont.						
6	88-90.....			Saloonmen—Sask. Saloonmen—Alta.	Watchmen, caretakers—Ont. Watchmen, caretakers—Que.	Compositors, printers—Que. Deliverymen and drivers—Ont.	Compositors, printers—Ont.	Shippers—Que. Section foremen, sectionmen and trackmen—Que.				
7	85-88.....	Bookkeepers, cashiers—Man. Bookkeepers, cashiers—H.C.		Barbers, hairdressers and manicurists—Ont. Messengers—Que. Messengers—Ont. Sommers, sailors and deckhands—Que.	Butchers and slaughtermen—Que. Bakers—Que. Deliverymen and drivers—Que.	Fishermen—N.S. Waiters—Que.		Foremen and workmen—Metal products—Mfg. Ont.	Lanemen and cablemen—Ont.			
8	84-89.....			Domestic servants—Ont. Waiters—Ont.	Bakers—Ont. Butchers and slaughtermen—Que. Chauffeurs and bus drivers—Que.	Farm labourers—N.B. Butchers and slaughtermen—Ont. Stationary engineers—Que.		Boiler firemen—Que.				
9	83-84.....		Seamen, sailors and deckhands—B.C. Seamen, sailors and deckhands—Ont.	Chauffeurs and bus drivers—Ont. Section foremen, sectionmen and trackmen—Alta.		Brakemen—Ont.	Section foremen, sectionmen and trackmen—B.C. Ont.	Boiler firemen—Ont.	Weavers—Que.			
10	80-82.....			Section foremen, sectionmen and trackmen—Sask.		Truck drivers—B.C. Cooks—Que. Tanneries, draymen and carriage drivers—Que.	Blacksmiths, hammermen, forgers—Que. Blacksmiths, hammermen, forgers—Ont. Locomotive firemen—Ont.	Packers, wrappers, labellers—Warehousing—Ont.		Truck drivers—Man.		
11	78-80.....			Section foremen, sectionmen and trackmen—Man.	Cooks—Ont.					Cabinet and furniture makers—Ont.		
12	76-78.....			Mechanics—Sask.	Mechanics—Alta. Mechanics—Man. Mechanics—B.C.			Plumbers, steam fitters, gas fitters—Que.				
13	74-76.....	Cooks—B.C.				Tailors—Que.	Machine operators—boots and shoes—Que.	Carpenters—N.B.				
14	73-74.....				Stationary engineers—B.C.	Blacksmiths, hammermen, forgers—Ont. Labourers—mines and quarries—Ont.	Sheet metal workers, tinmiths—Ont. Plumbers, steam fitters, gas fitters—Ont. Toolmakers, die cutters, sinkers—Ont.	Labourers—mines and quarries—Que. Carpenters—N.S.				
15	70-72.....					Tailors—Ont.						
16	68-70.....			Miners (other than coal)—Que.								
17	66-68.....						Fitters, assemblers, sectionmen—Ont.	Machine tenders—Metal products—Mfg.—Ont.				
18	64-66.....							Lumbermen—N.B.				
19	63-64.....				Fishermen—B.C.			Longshoremen, stevedores—Que.				
20	60-62.....				Carpenters—Man. Carpenters—Alta.		Moulders, core-makers, casters—Ont. Miners (other than coal)—B.C. Brick and stone masons—Que.					
21	58-60.....											
22	56-58.....			Carpenters—Sask.								
23	54-56.....					Brick and stone masons—Ont.				Coal miners—B.C.	Labourers—coal mining—N.S.	
24	52-54.....						Coal miners—Alta.					

smaller than average proportion of these out of work from "no job", the chief causes being temporary lay-off and illness. It is impossible to label all the occupations listed, but the foregoing should indicate main reasons for mobility and immobility and especially the number of ways in which they are brought about.

It would be a fascinating task to run down the whole list and explain why weavers in Quebec hold the position they do. Of the 1,133 males who lost time during the year in this occupation all but 298 were back at work on June 1. The great part of those who lost time lost only short periods. They behave throughout in a normal manner, but we can not say why. All in all it seems most significant that seasonal occupations are thrown into the same lateral classes as occupations which are very difficult to re-enter (once the door is shut) because of their exalted position—accountants and auditors, etc.—and that they are thus thrown into the same class for explicable reasons. In the latter case a number of trained individuals who have been idle for a long time fail to re-enter their occupation; in the former case a number employed in the busy season were in the slack season thrown out together and irrevocably. Both processes give the same results as far as rigidity is concerned. The statement is best studied by examining occupations in the same class of percentage of year lost as they proceed from left to right until we reach such an occupation as railway foremen and inspectors whose loss of time is largely voluntary or habitual. This seems to be the ideal class.

7. Industries of the Sample.—Statement CXXIII shows mobility in and out of employment in industries. This would seem to be the most interesting of all. Notice that the industries are much more widely spread by mobility classes than are occupations. This in itself is highly significant—the industrial attachment superimposed upon occupations manifestly influences these occupations so as to spread them into wider classes from the point of view not only of likelihood of retaining their jobs but also and more particularly from the point of view of regaining employment once it is lost. Taking the mobility index, the widest spread in occupations is 1.827 to 4.347; in industry from 1.908 to 5.259. This is a difference between occupation and industry of almost four intervals and each interval signifies a wide difference. This can best be illustrated by supposing the two extremes of both occupations and industries showed the same average number of weeks lost during the year—say 5.2 weeks or 10 p.c. of the year. What difference would there be in the chances of losing the whole year? The chances would be such that the spread would be eight times as great in industries as in occupations. We bring out the true significance better, however, if we compare the two in another way. The normal number of interchanges within the year is (as shown in Appendix 1) 2.9. Let us now compare industries and occupations from the point of view of the time lost by workers losing time.

Let us first take the average time lost during the year 1931 by all male wage-earners, *viz.*, 10.5 weeks (approximately) or 20 p.c. of the year. Applying our normal index of interchanges (2.9) we derive the number of weeks lost by those losing time as follows. If p = percentage of the year worked by all wage-earners, then $1-p$ = percentage of the year lost, and $1-p^2$ = percentage of the wage-earners who lost any time. Therefore $\frac{1-p}{1-p^2}$ = percentage of year lost by those losing time and $\frac{52(1-p)}{1-p^2}$ = average number of weeks lost by those losing time. This, it must be remembered, refers to the normal interchange or mobility applied to the actual time lost by all wage-earners of Canada in 1931. Let us now compare the spreads of occupations and industries. The standard deviation (say from this 2.9) of occupations was 0.46 meaning that the extremes caused by the total spread (three times this standard deviation on either side of 2.9) was from 1.52, the least mobile, to 4.23 the most mobile. Applying the above formula we have:— $\frac{52(1-.8)}{1-.8^2}$ as compared with $\frac{52(1-.8)}{1-.8^2}$ or in average weeks lost by those losing time respectively of 36.2 and 16.9 or a spread of 19.3 weeks.

Taking industries, the standard deviation was .58 so that the spread in the index (around the 2.9) was from 1.16 to 4.64. Applying the formula we have in average weeks lost by those losing time 45.6 weeks to 16.1 weeks, a spread of 29.5. The difference in spread between the industries and occupations, therefore, was 10.2 weeks or a fifth of the year, *i.e.*, the industrial attachment in the given occupation increased the difference between the chances of one set of unemployed workers losing a long time and another set a short time by one-fifth of the year the chances of being unemployed remaining the same.

The extreme industries actually shown, but not quite coinciding with this calculation are investment and loan in Ontario and Quebec on the immobile side and non-ferrous smelting in British Columbia on the mobile. The latter seems to be a paternal sort of industry which holds on to its workers through good and bad times and spreads the unemployment among them probably by giving them part-time rather than dismissing them. Only about 39 p.e. of those who lost time during the year lost it through "no job"; the remainder through temporary lay-off, etc. Those who lost any time in the extreme of non-paternalism, investment and loan in Ontario and Quebec, might as well give up hope for re-employment. Close to these came banking in Quebec, education in Manitoba, laundering in Ontario, hotels, restaurants, and taverns in Manitoba, Saskatchewan and British Columbia and gardening and truck farming, fish curing and packing in British Columbia. The last mentioned is a case of a huge expansion during the boom period and drastic contraction by 1931. It is interesting to find this industry in the company of banking and education.

Summary of Periodicity Statements.—Let us pass in review all seven statements, having regard to the ingredients that enter into (1) the immobile, (2) the mobile, groups. (1) Among the most immobile are the Prairie Provinces with their specialization, the male sex, the oldest and youngest ages, the Chinese and Central European races, the immigrant arrivals of 1930-31, the occupations, cooks in British Columbia and accountants and auditors in Quebec, the industries, investment and loan in Ontario and Quebec, education in Manitoba, hotels, restaurants, and taverns in three western provinces and other seasonal and cyclical industries. (2) Among the most mobile we find the Maritime Provinces, the ages around the 40's for males and the 30's for females, the female sex, the Japanese, Hebrew and Italian races, the immigrant arrivals of 1921-25; the occupations, railway workers in Ontario, labourers in Nova Scotia coal mines, etc., the industries, non-ferrous smelting and pulp and paper manufacturing in British Columbia, petroleum products and liquors and beverages manufacturing in Ontario, and asbestos mining and rubber products manufacturing in Quebec. Is there any common bond between the members of each of these two sets?

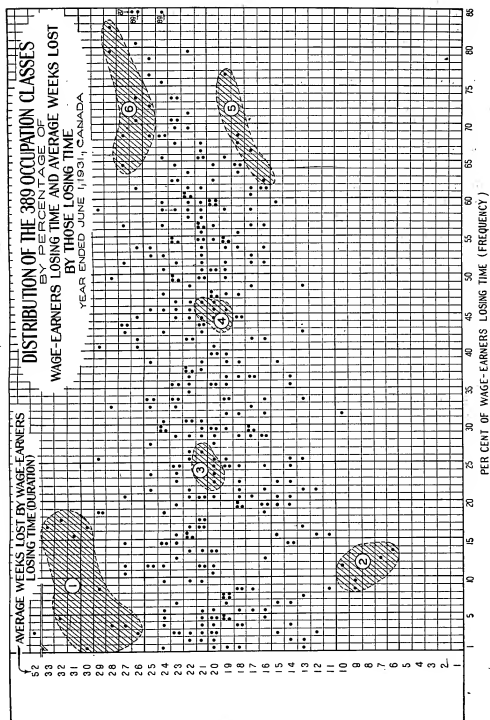
It is clear from the age ingredient that mobility is somehow associated with fitness. The years of arrival 1921-25 were years of depression and with this free *emigration* so that we find Canadians in hundreds of thousands leaving for the United States, etc. The immigrants who came then and survived until 1931, from the fact that they did not join these emigrants, must have possessed some qualities of fitness. The position of the female sex can not be attributed to good fortune in being in the strong industries for these industries are apt to show greater immobility than the others, but the female has one quality which makes it easy for her to regain employment, *viz.*, the willingness to accept low wages.

Test by Fundamental Criteria of Unemployment.—The foregoing section deals with the question of rigidity, etc., in a more or less deductive manner, basing the deduction on what seems to be the inevitable conclusions from Appendix 1. To be satisfied that these conclusions are free from bias let us attack the problem from an entirely different standpoint to see if we arrive at the same conclusion. Instead of being guided in selecting occupations by the index of rigidity let us arrange the occupations in the order of two fundamental criteria of unemployment and select blindly from the scatter diagram.

Correlation of Frequency and Duration.—The 389 occupation classes of Canada were used to form the scatter diagram of duration of unemployment against percentage losing time, which latter we may consider as representing frequency of unemployment (Chart 16). The basic figures appear in Table 18.

While some correlation of the two factors was to be observed, it was not shown in the same striking form as appeared in Chapter IV where it was found equal to .503. The reason lay in the heterogeneity of the groups here used with regard to size, (the number of persons in a group varying from a hundred to a hundred thousand) and also their mixed composition in the matter of province; not improbably the correlation is obscured through one province cancelling out another and one observes merely the resultant central tendency.

Now the question that comes to the mind on a first view of an elaborate scatter diagram such as this is "What types of occupations are represented by the different areas of the chart?" If there is any significance in the distribution it should place in contiguous positions occupations of similar type.



For the purpose of investigation, rings were drawn about groups of five to ten points in various parts of the diagram. The coordinates of the points were then looked up in the original tables and the occupations identified. In each of the six areas of the diagram that were thus investigated, significantly uniform results were obtained.

In Area 1 duration was exceptionally great, but frequency very low. The occupations here included four "owner and manager" classes,—tobacco products, bus and taxicab lines, furs and fur goods and printing and publishing,—the remainder being occupations of a professional nature—lawyers and notaries, osteopaths and chiropractors, mission workers—or else, what is closely allied, of a quasi-own account or employer status—pawnbrokers, stock brokers, real estate agents. In fact each of the occupations in this group except justices and magistrates has a far smaller percentage of wage-earners among its gainfully occupied than non-agricultural occupations in Canada as a whole. The figures follow. The rule used in regard to decimal places in Table 18 was dependent on the number of wage-earners of specified sex in each occupation as follows: under 100 wage-earners, percentages to nearest whole number; between 100 and 999 wage-earners, percentages to one place of decimals; 1,000 and over wage-earners, percentages to two places of decimals.

CXXIV.—PERCENTAGE OF MALE WAGE-EARNERS LOSING TIME AND DURATION OF UNEMPLOYMENT, IN WEEKS, OF THOSE LOSING TIME IN THE OCCUPATIONS INCLUDED IN SELECTED AREAS OF THE SCATTER DIAGRAM (CHART 16) CANADA, YEAR ENDED JUNE 1, 1931

Occupation	P.C. Losing Time during Year	Duration of Unemploy- ment among Those Losing Time
AREA 1		
Owners and managers—Mfg.—Tobacco products.....	2.7	52.00
Owners and managers—Mfg.—Furs and fur goods.....	4.	26.50
Owners and managers—Mfg.—Printing, publishing, bookbinding.....	3.35	25.82
Owners and managers—bus and taxicab line.....	9.3	29.27
Justices and magistrates.....	0.7	30.25
Mission workers.....	4.9	32.31
Osteopaths and chiropractors.....	17.	32.50
Real estate agents.....	17.97	31.61
Stock brokers.....	16.00	29.78
Pawnbrokers.....	16.	31.00
Lawyers and notaries.....	3.59	27.95
AREA 2		
Foremen and overseers—Mfg.—Printing, publishing, bookbinding.....	8.6	8.93
Foremen and overseers—Other transportation.....	9.9	9.18
Foremen, inspectors—electric railway.....	12.0	9.50
Foremen and overseers—bus and taxicab line.....	13.	7.40
Foremen and overseers—garage.....	13.8	6.13
AREA 3		
Collectors—Commercial.....	22.89	20.20
Designers and draughtsmen.....	24.15	20.41
Butter and cheese makers—Mfg.....	24.56	19.96
Printers' and bookbinders' apprentices—Mfg.....	26.17	20.37
Stage hands.....	26.63	21.27
AREA 4		
Teamsters, draymen, carriage drivers.....	44.50	21.04
Brush and broom makers—Mfg.....	45.1	20.20
Boiler firemen.....	45.70	19.56
Other—Drinks and beverages—Mfg.....	46.7	19.78
Instrument and appliance assemblers.....	47.28	20.67
Tanners—Mfg.—Leather products.....	46.2	18.93
AREA 5		
Cigarette makers—Mfg.....	63.	16.41
Other—Mfg.—Rubber products.....	66.62	16.87
Tire builders and tube makers—Mfg.....	67.62	17.85
Breakers, pickers, and wool sorters—Mfg.—Textiles.....	69.4	17.92
Rubber shoe makers—Mfg.—Rubber products.....	77.08	18.96
AREA 6		
Brick and stone masons' apprentices.....	65.3	26.54
Carpenters.....	69.40	24.55
Labourers—Other.....	69.20	27.43
Glass blowers—Mfg.....	70.6	26.10
Roofers (not metal) and slaters.....	74.2	25.80
Brick and stone masons.....	80.10	27.70
Plasterers and lathers.....	83.16	27.75

CCXV.—PERCENTAGE OF GAINFULLY OCCUPIED MALES WHO ARE WAGE-EARNERS AND PERCENTAGE OF ALL TIME LOST DUE TO "NO JOB" IN THE OCCUPATIONS OF AREA 1,
CHART 16, CANADA, YEAR ENDED JUNE 1, 1931

Occupation	P.C. of Gainfully Occupied Males Who Are Wage-Earners	P.C. of All Time Lost Due to "No Job"
Osteopaths and chiropractors.....	2.7	20 ¹
Lawyers and notaries.....	13.0	66
Owners and managers—bus and taxicab line.....	18.1	80 ¹
Owners and managers—Mfg.—Furs and fur goods.....	18.2	93 ¹
Real estate agents.....	33.8	85
Owners and managers—Mfg.—Printing, publishing, bookbinding.....	39.5	79
Pawnbrokers.....	41.7	64 ¹
Owners and managers—Mfg.—Tobacco products.....	55.8	100 ¹
Stock brokers.....	59.6	85
Mission workers.....	74.5	58 ¹
Justices and magistrates.....	100.0	30 ¹
All occupations.....	62.0	81
All occupations except agriculture.....	84.6	80

¹Occupations with less than 10 persons losing time.

Interpretation of the Chart.—Of course, there are as yet no data, either in Canada or in any other country, on the employment condition of workers whose status is other than that of wage-earner. But our scatter diagram seems to have gathered into one corner the wage-earners whose condition of employment, while technically wage-earner, comes very close to "employer" and "own account". While admittedly the number losing time in each of these occupations is very small, yet their similar nature is striking. An indication is given that unemployment among men of independent economic status is similar to that of this group—few cases of short pauses due to actual unemployment and extremely long stretches whenever unemployment actually does occur. This, of course, is not to count as unemployment the odd day that an employer might take off—such a day would be more similar to a holiday with pay for a wage-earner.

In Area 2 there is a low percentage losing time, as in Area 1, but here we have the opposite extreme in duration—such losses of time as exist being very brief. Strikingly enough, when the occupations of this group were looked up they were found to be foremen in every one of the five cases—printing, other transportation, electric railways, bus and taxicab service and garage. It seems that in this part of the chart we have men of an essentially wage-earning type of occupation, in a high classification as regards earnings, absolutely indispensable to the business of production and therefore able to find new jobs quickly when dismissed. Much of such time as is lost is due to temporary lay-off. This and the high level of wages is seen in the following statement:—

CCXVI.—AVERAGE EARNINGS PER WEEK WORKED AND PERCENTAGE OF ALL TIME LOST DUE TO "NO JOB" IN THE OCCUPATIONS OF AREA 2, CHART 16, CANADA, YEAR ENDED JUNE 1, 1931

Occupation	Average Earnings per Week Worked	P.C. of All Time Lost Due to "No Job"
	\$	
Foremen and overseers—Mfg.—Printing, publishing, bookbinding.....	39.77	62
Foremen and overseers—Other transportation.....	35.51	69
Foremen and overseers—electric railway.....	33.95	47
Foremen and overseers—bus and taxicab line.....	31.46	43 ¹
Foremen and overseers—garage.....	32.80	33
Average for all occupations.....	22.56	81

¹Less than 10 persons losing time.

Area 3 represents a slightly less than average duration of unemployment as well as a less than average percentage losing time. It is somewhat above the trend line of the scatter diagram.

Its occupations seem to be more independent in nature than those of Area 4 following, but fairly heterogeneous.

Area 4 is slightly below the line of trend. It represents as miscellaneous a group of occupations as could be gathered. They, along with Area 3, are the "average" occupations from the point of view of the quality of rigidity previously defined.

Area 5 contains occupations in which from 65 to 75 p.c. of the men in the occupation lose time far greater than in "all occupations", but the average time lost by those losing time is only about 15 weeks as against 24 weeks for "all occupations". It was found that these occupations belong to the rubber, textile and tobacco industries—the three most highly organized types of manufacturing, in which the heavy unemployment which falls to the occupation is spread evenly among individuals so that each loses a relatively short time.

Area 6 is normal in that it shows a duration of unemployment consistent with a frequency running up to over 80 p.c. losing time. All but one of the eight occupations are in the very seasonal construction industry. They show a rigidity almost exactly equal to that of "all occupations".

Considering this quality of "rigidity", as defined elsewhere in the monograph, possessed by each of the six groups of occupations of Chart 16, we find that Group 1 ranks very high, its rate of interchange being measured by the coefficient of 1.7. Group 2 has the least rigidity with a coefficient of interchange between employed and unemployed of 8.5. Groups 3 and 6 are very slightly above the average rigidity of all occupations, and 4 and 5 are significantly above.

It was found in locating the various clerical and office occupations that in general they fall between 1 and 2 and are somewhat veered towards 3—in other words their duration of unemployment, once they lose time, is about half-way between the most rigid and the least rigid classes represented by managers and foremen respectively, and their chance of losing time is rather greater than either, putting them in the class of collectors, designers, etc., the better-off section of the rather miscellaneous group which the diagram gathers to its centre.

In order to make sure that the occupation types which our method of investigating brings out are really representative of their respective areas of the diagram, neighbouring points were looked up. The nearest points to Area 1 are other laundering, health professionals, hotel managers and owners and managers in drinks and beverages; every one of these justifies the description of Area 1 indicated previously as representative of occupations verging on the "own account" and professional statuses. Group 2 is further shown to locate the field of "foremen" by the fact that its three nearest occupations are also foremen—in "Telegraphs", "Electric light and power", and "Electrical apparatus". The four nearest to Group 5 are button makers, compounders and moulders in rubber products, spoolers, warpers, and beamers in textiles and carders and drawing frame tenders, also in textiles. These tell the same story as the occupations of Area 5—they are typical members of industries in which lay-offs are frequent but of short duration because of the policy of spreading work among their employees followed by the large establishments that dominate the rubber and textile fields. The closest points to Area 6 are carriage builders, painters, decorators and glaziers, structural iron workers, lumbermen, longshoremen, cement finishers, fitters, assemblers and erectors. Six of the seven occupations here given are characterized by very definite seasonality in most parts of Canada; three of them refer strictly to construction; lumbermen to a winter industry, and longshoremen, in many parts of Canada, to a summer industry. It is interesting to observe the striking difference in industrial connection between Areas 5 and 6, though they have about the same percentage losing time. The two criteria of unemployment—frequency and duration—are essential for a satisfactory analysis.

The striking distinction between the three criteria of unemployment—percentage of wage-earners unemployed June 1, the percentage losing time during the year and the weeks lost per person losing time—is brought out in considering the 50 cases at the bottom of the list of 389 occupations by each of the three criteria. We shall refer to the three criteria as average, frequency and duration of unemployment respectively.

Relationship of Managers and Foremen to Their Establishments.—When the 389 occupations were arranged in order of the three criteria of unemployment the number of managers (and foremen) who appeared in the first 25, and in the first 50 cases, are given below.

Criterion	First 25 Occupations		First 50 Occupations	
	Managers	Foremen	Managers	Foremen
Average.....	9	3	22	7
Frequency.....	11	-	27	-
Duration.....	3	14	4	24
Total managers.....			37	
Total foremen.....			32	

It is plain that while managers' occupations take more of both the first 25 and the first 50 places in the average of net unemployment, yet they are considerably below the foremen in the list by duration, where 24 foremen against 4 managerial occupations appear in the top 50.

To investigate the relationship of managers and foremen respectively to their establishments, a list was made of the 37 managers in order of the general percentage unemployment in the industry of which they are a part, in so far as the census classification enabled that industry to be identified and separated and showing percentage unemployment among foremen and overseers in the same industry. It was found that managers show a correlation of .48 with their industry, while foremen show a correlation of .54. This seems to indicate what we would naturally suspect, that the manager is more closely bound to the establishment, and less likely to share the vagaries of unemployment that fall to the lot of the wage-earners, though one would have anticipated a greater difference between the correlations.

"Other" Occupations.—Less definite in constitution than "foremen" or "managers" is the class "other" attached to each main occupation group. Here are assembled the occupations either insufficiently defined or existing in very small numbers—maintenance staff, messengers, telephone operators, etc.

CXXVII.—SELECTED INDUSTRIES WITH PERCENTAGE UNEMPLOYMENT AMONG MANAGERS, FOREMEN AND THE CLASS "OTHER", CANADA, YEAR ENDED JUNE 1, 1931

Industry	P.C. Unemployment			Average Weeks Lost among "Other" Occupations
	In Industry as a Whole	Among Managers	Among Foremen	
Trade—Wholesale.....	9.64	2.32	-	-
Electric Light and Power.....	10.07	0.6	3.3	-
Mfg.—Chemical and allied products.....	10.15	0.8	4.8	15.31
Printing, publishing, bookbinding.....	10.17	2.07	1.3	19.71
Mfg.—Drinks and beverages.....	10.73	3.3	6.8	19.78
Service—Laundering.....	11.00	0.9	1.2	29.47
Other transportation.....	11.23	0.64	0.9	24.30
Telegraph and telephone systems.....	11.73	0.5	1.75	-
Trade—Retail.....	11.79	3.19	3.95	-
Mfg.—Textile products.....	11.97	2.1	4.86	19.00
Mfg.—Vegetable foods.....	12.38	2.01	4.5	17.12
Mfg.—Tobacco products.....	12.36	2.7	7.1	14.70
Other entertainment.....	12.69	8.6	-	-
Mfg.—Miscellaneous products.....	14.11	1.7	5.1	21.65
Mfg.—Electrical apparatus.....	14.37	0.9	3.1	21.23
Mfg.—Non-metallic mineral products.....	14.67	2.0	4.04	21.01
Mfg.—Animal foods.....	15.38	3.0	5.2	23.01
Service—Personal—Hotels, restaurants, and taverns.....	15.79	6.27	-	-
Mfg.—Rubber products.....	15.88	2.1	6.4	16.87
Service—Recreational—Theatres.....	16.23	6.3	-	-
Road transportation—bus and taxicab.....	16.43	5.1	-	-
Road transportation—garage.....	17.15	3.3	2.2	-
Mfg.—Leather products.....	17.32	2.3	5.7	18.68
Mfg.—Precious metals.....	18.17	1.	3.0	20.98
Mfg.—Paper products.....	18.68	1.4	11.65	15.86
Mfg.—Metal products.....	20.99	2.20	8.00	23.30
Road transportation—Cartage and transfer.....	21.00	3.5	5.1	-
Mfg.—Wood products.....	21.35	3.97	7.13	20.71
Water transportation.....	21.81	1.4	9.8	22.15
Mfg.—Furs and fur goods.....	22.72	2.	7.00	-
Mfg.—Textile goods and wearing apparel.....	26.83	2.1	7.6	21.15
Building and Construction.....	34.13	7.20	11.45	22.67
Logging.....	39.35	13.6	18.6	-
Other mining.....	39.87	5.7	8.99	22.05
Coal mining.....	43.50	8.6	13.4	22.12
Unspecified.....	54.54	3.	8.0	26.89

¹Where the base of the percentage is less than 100, the percentage is given to the nearest whole number; between 100 and 1,000 to one place of decimals, and 1,000 and over, to two places of decimals.

Here we find that certain groups of occupations—"Coal mining", "Unspecified", "Building and construction", stand very far below the straight-line trend which describes the relationship in the remaining industries between the "other" occupations and the industry as a whole. It is as though the "other" occupations in such an industry as mining do not rise to the same high percentage of unemployment as workers in the pits in bad times, consisting to some extent, as they do, of maintenance staff.

Confirmation of Index of Rigidity.—The percentage of wage-earners losing time (frequency) and the length of time lost by those losing time (duration) give, as a kind of average, the third measure of unemployment, average weeks lost by all wage-earners (or percentage unemployment on a given day), which is the measure most commonly used. Table 18 shows that if we arrange the occupations by any one of these criteria alone we do not get the same decisive segregations of different types of work that the distribution on the basis of two measures shows.

The index of mobility was defined earlier in the chapter as the ratio of the logarithm of the percentage losing no time to that of the percentage of the year worked by all wage-earners; it gives the relationship between the elements of frequency and duration. Thus by taking it along with the percentage of the year worked as in statements of this chapter we get, for the various ages, the various immigrant races and years of immigration, the provinces, the sample of industries, and occupations representing the various provinces, layouts describing the employment situation and indicating that rigidity or lack of mobility refers to the very young and very old ages; to the more recent immigrants and particularly to those of Chinese or Eastern European stock; and to the financial, clerical and professional occupations. Finally the entire list of occupations for Canadian males was shown as a scatter diagram (Chart 16) of the percentage of male wage-earners losing time and the weeks they lost, the figures being given in the second and third columns of Table 18. When items of the scatter diagram were looked up in the table they verified the theory that to different rigidity values correspond essentially different occupational types.

Does this quality of "rigidity" in unemployment between classes really have an occupational significance? Can we be sure that we are not building up an argument by attributing to occupations what are really only variations in unemployment between individuals? It seems from the way in which items adjacent in location in the scatter diagram (Chart 16) represent similar types of occupations that more than accidental occupational connection is present.

The fact that in one corner of the scatter diagram we find occupations of an independent nature (managers in various industries, etc.), in another those of a supervisory nature, *e.g.*, foremen, in a third those attached to the industries characterized by the stronger and more paternal firms, as the manufacture of rubber and textile goods, etc., seems to bear out the point that these criteria of unemployment are representative of the actual economic basis of unemployment.

CHAPTER XII

THE 1936 CENSUS OF UNEMPLOYMENT IN THE PRAIRIE PROVINCES

Changes in the Relations between Population, Gainfully Occupied and Wage-Earners, 1931-1936.—Perhaps the two most outstanding changes in the relations between the population, the total working population, and the wage-earners between 1931 and 1936 have been, first, the decline in the proportion of persons of working age, *i.e.*, 14 years of age and over, having a gainful occupation and, secondly, the diminishing importance of wage-earners in the gainfully occupied population itself. For the males these changes have occurred uniformly in each of the Prairie Provinces. On the other hand, wage-earners represented a greater proportion of all gainfully occupied females in 1936 than in 1931 in Saskatchewan and Alberta.

CXXVIII.—NUMBER AND PERCENTAGE OF POPULATION 14 YEARS OF AGE AND OVER GAINFULLY OCCUPIED AND PROPORTION OF WAGE-EARNERS IN GAINFULLY OCCUPIED POPULATION, PRAIRIE PROVINCES, 1931 AND 1936

Item	1931			1936		
	Both Sexes	Males	Females	Both Sexes	Males	Females
MANITOBA						
Total population.....	709,139	368,065	332,074	711,216	368,580	342,636
Population 14 years of age and over.....	496,535	264,843	231,692	523,617	273,588	250,029
Gainfully occupied population.....	270,466	223,573	44,893	269,820	224,009	45,811
As p.c. of population 14 years and over.....	54.47	85.17	19.38	61.33	81.88	18.32
Wage-earners.....	170,712	132,853	37,859	158,407	119,939	38,468
As p.c. of population 14 years and over.....	34.38	50.17	16.34	30.25	43.84	15.39
As p.c. of gainfully occupied population.....	63.12	58.90	84.31	58.71	53.54	83.97
Employers, own accounts and no pays.....	99,754	92,710	7,044	111,413	104,070	7,343
As p.c. of population 14 years and over.....	20.09	35.01	3.04	21.28	38.04	2.94
As p.c. of gainfully occupied population.....	36.88	41.10	15.69	41.29	46.46	16.03
SASKATCHEWAN						
Total population.....	921,785	499,935	421,850	931,547	498,606	432,939
Population 14 years of age and over.....	616,265	345,055	271,210	651,660	356,513	295,177
Gainfully occupied population.....	338,730	301,261	37,469	346,604	304,893	41,711
As p.c. of population 14 years and over.....	54.96	87.31	13.81	53.19	85.52	14.13
Wage-earners.....	145,552	116,148	29,404	142,411	108,839	33,572
As p.c. of population 14 years and over.....	23.62	33.66	10.84	21.85	30.53	11.37
As p.c. of gainfully occupied population.....	42.97	38.55	78.50	41.09	35.70	80.49
Employers, own accounts and no pays.....	193,168	185,113	8,055	204,193	196,054	8,139
As p.c. of population 14 years and over.....	31.34	53.85	2.97	31.33	54.99	2.76
As p.c. of gainfully occupied population.....	57.03	61.45	21.50	58.91	64.30	19.51
ALBERTA						
Total population.....	731,605	400,199	331,406	772,782	417,954	354,828
Population 14 years of age and over.....	507,761	286,938	220,823	553,299	306,886	246,413
Gainfully occupied population.....	286,048	252,509	33,539	297,619	261,366	36,253
As p.c. of population 14 years and over.....	56.34	88.02	15.15	53.79	85.17	14.71
Wage-earners.....	142,404	115,095	27,309	144,699	115,875	28,824
As p.c. of population 14 years and over.....	28.05	40.43	11.96	26.15	37.76	11.69
As p.c. of gainfully occupied population.....	49.78	45.92	78.95	48.61	44.33	79.42
Employers, own accounts and no pays.....	143,644	136,604	7,040	152,950	145,490	7,460
As p.c. of population 14 years and over.....	28.29	47.61	3.19	27.64	47.41	3.03
As p.c. of gainfully occupied population.....	50.22	54.08	21.05	51.39	55.67	20.58

It will be noticed that the gainfully occupied males as a percentage of all males at working ages, *i.e.*, 14 years and over, fell off between 1931 and 1936 in each province. With the exception of Saskatchewan where there was a slight gain in this respect, the same tendency may be observed for females. A glance at Statement CXXIX will indicate in what age groups this decline in the proportion gainfully occupied took place.

CXXIX.—PERCENTAGES OF POPULATION GAINFULLY OCCUPIED, BY AGE GROUP AND SEX, PRAIRIE PROVINCES, 1931 AND 1936

Age Group	1931		1936	
	Males	Females	Males	Females
Manitoba.....	85-15	19-37	81-88	18-32
14-24.....	66-90	30-27	60-42	26-41
25-44.....	97-89	16-66	97-70	19-32
45-64.....	85-24	10-70	94-65	9-40
65 and over.....	55-20	5-55	45-34	4-53
Saskatchewan.....	87-28	13-81	85-52	14-13
14-24.....	70-76	20-40	67-77	20-31
25-44.....	98-30	11-03	98-33	12-85
45-64.....	96-19	9-00	96-10	8-22
65 and over.....	59-38	6-47	54-13	5-21
Alberta.....	88-01	15-15	85-17	14-71
14-24.....	68-82	22-08	63-86	20-96
25-44.....	98-66	12-59	98-16	13-68
45-64.....	96-43	9-97	94-95	9-41
65 and over.....	65-13	6-50	56-41	5-75

The significant feature of this statement is the decrease in the proportions of young persons 14-24 years of age, and of persons in the oldest age group, 65 years and over, reporting a gainful occupation in 1936 as compared with 1931. Owing to the depression many young persons who normally would have entered the ranks of the gainfully occupied population failed to do so, and, on the other hand, a considerable number of aged workers having lost their jobs and being unable to secure employment were reported as retired from gainful occupations at the 1936 Census.

Some idea of the number of young people 14-24 years of age, who had never followed a gainful occupation at the 1936 Census but were seeking employment at that time may be gained from the statement that follows.

CXXX.—COMPARISON OF THE CHANGE IN THE NUMBER OF GAINFULLY OCCUPIED AND WAGE-EARNERS 14-24 YEARS OF AGE, BETWEEN 1931 AND 1936, WITH THE NUMBER OF YOUNG PERSONS SEEKING WORK JUNE 1, 1936, WHO HAD NEVER WORKED PRIOR TO THAT DATE, BY SEX, PRAIRIE PROVINCES, 1931 AND 1936

Item	Population 14-24 Years			
	1931		1936	
	Males	Females	Males	Females
MANITOBA				
Total.....	79,139	77,612	80,867	81,263
At school.....	21,093	21,833	22,096	21,566
Gainfully occupied.....	52,946	23,492	48,858	21,460
Wage-earners.....	31,383	22,101	24,003	19,633
No occupation, seeking work.....	-	-	8,041	8,622
SASKATCHEWAN				
Total.....	106,308	97,760	110,465	106,919
At school.....	27,118	29,579	30,202	32,051
Gainfully occupied.....	75,226	20,035	74,857	21,710
Wage-earners.....	32,230	18,228	28,038	19,855
No occupation, seeking work.....	-	-	3,514	5,296
ALBERTA				
Total.....	80,017	74,460	84,990	82,411
At school.....	22,245	24,678	25,832	26,682
Gainfully occupied.....	55,071	16,886	54,273	17,272
Wage-earners.....	28,735	15,200	24,062	15,707
No occupation, seeking work.....	-	-	3,581	4,313

It will be seen that the number of young persons in this category of potential workers was considerably larger than the decline in the total number having a gainful occupation between 1931 and 1936. For the males the decrease in the number following wage-earning occupations more nearly corresponded with the number of males who had never worked at the date of the

1936 Census but were seeking work on that date. No doubt this class existed in 1931 but an addition of the gainfully occupied and the students for that year compared with the total population between 14 and 24 years would indicate that the number must have been much smaller than in 1936. For the females the growth of the population at working ages in the three provinces combined was considerably more rapid than for those attending school or having a gainful occupation. Hence the creation of a considerable class of young women at the 1936 Census who had never worked but were seeking employment.

As already mentioned, the other noteworthy change that had taken place between 1931 and 1936 in the Prairie Provinces was the decline in the importance of the wage-earning element in the gainfully occupied population. It is true that in Alberta wage-earners showed a small numerical increase but even in this province the growth recorded by this class of worker was not as rapid as among persons on own account, employers, and unpaid family workers, the latter being mainly farmers' sons. The decrease in the number of wage-earners during this period, a drop of no less than 12,000 in Manitoba, is of some consequence from the standpoint of the phenomenon of unemployment. It indicates that a contraction in employment for wage-earners may not be fully matched by a corresponding increase in unemployment. The supply of wage-earners, as is evident from the figures in Statement CXXVIII, is not a fixed quantity changing only with the growth or decline in the population at working ages.

During these five years of depression many persons dropped out of the ranks of the wage-earners and a not inconsiderable proportion seem to have returned to the farm. Contrary to the general trend since the beginning of the century the proportion of the total gainfully occupied population in agriculture rose in 1936 over the preceding census period. Similarly, reversing what had been the trend previous to 1931, the rural population in these provinces grew at a more rapid rate than the urban from 1931 to 1936, the urban population actually declining in Manitoba and Saskatchewan during this period.

The Trend of Employment, 1931-1936.—Table 19 shows the relation of unemployment on the census dates, June 1, 1931 and June 1, 1936, and during the census years 1931 and 1936, to changes in employment in selected industries in the Prairie Provinces, showing (a) expanding and (b) declining employment over this five-year period. The industries listed are all those with 100 or more wage-earners actually at work on the census date, June 1, 1931, in the provinces of Manitoba, Saskatchewan, and Alberta combined, with the exception of a few industries where there was some doubt as to the comparability of the figures on employment for 1931 and 1936 owing to differences in classification at the two censuses. The number of wage-earners in 1931 and 1936 is shown for the industries lacking comparability under the heading, "Industries not classified," but no rates or averages have been calculated. The same procedure has been followed for the balance of wage-earners, *viz.*, those in industries with less than 100 wage-earners at work on June 1, 1931. Finally as a basis of comparison for individual industries, figures showing the changes in employment and unemployment for all industries appear at the foot of the table.

To ensure a more exact comparison of the figures for certain industries, wage-earners employed in the manufacturing, merchandising and repairing of the product of these industries were combined to form one industrial class, *e.g.*, "electrical apparatus manufacturing, retail dealing, and repair." The expanding industries are listed in the order of the percentage gain in employment between 1931 and 1936, those with the largest gains being listed first, while the industries with decreases in employment are arranged to show first those recording the least decline, followed next by those with greater contraction in employment, and last, those with most severe losses in employment. In all but a few cases it is believed that the percentage increases or decreases shown measure fairly accurately the actual changes in employment that have taken place between 1931 and 1936.

In a general analysis of the British unemployment insurance records by W. H. Beveridge* a similar study of the relative unemployment among growing and declining industries was made covering the period between 1923 and 1935. He concluded this study with the following statement: "It is as fallacious to speak of 'unemployment' in general as to speak of 'labour' in general without distinguishing between the different industries and types of unemployment. Even in

*"An Analysis of Unemployment in Great Britain"—Series of three articles in *Economics*—I, Nov., 1936; II, Feb., 1937; III, May, 1937.

industries where the growth of employment has been most pronounced unemployment is still as great as in many industries that have shown little change in the numbers employed." The same conclusion may be drawn from Table 19 with respect to unemployment by industry in the Prairie Provinces between 1931 and 1936.

Several of the industries showing the greatest expansion in employment over this period recorded an average period of unemployment during the census year which was considerably above the average for all industries in these provinces. The average of 14.33 weeks in 1936 which was shown for the expanding industries, though approximately the same as for the industries with declining employment, reflects the weight of the numbers of wage-earners among this group of industries that are in agriculture. This industry which accounted for about one-third of all wage-earners in the expanding industries had an average of 19.04 weeks of unemployment during the census year ended June 1, 1936. In both the expanding industries and those showing a decrease in employment between 1931 and 1936 unemployment was less at the census date, June 1, 1936 than on June 1, 1931 although the average period of unemployment during the census year 1936 was longer than in 1931. For a number of the industries with the greatest losses in employment between 1931 and 1936, the duration of unemployment in 1936 was rather high. This was particularly true of the building industry and of certain non-metallic mineral manufacturing industries associated with this industry.

Duration of Unemployment, 1931-1936.—A casual examination of the percentages of unemployment on June 1, 1931 and June 1, 1936 for the industries shown in Table 19 would indicate that on the whole unemployment was less on the census date, 1936 than on the same date in 1931. Incidentally, the expanding industries in this table record 32 cases where this is true and only 13 cases where unemployment was higher in 1936 than in 1931. Even for the industries with declining employment 33 of them had less unemployment on June 1, 1936 than on June 1, 1931 and only 29 showed a higher percentage of unemployment on the census date, June 1, 1936 than in 1931. On the other hand, the average number of weeks lost by all wage-earners was in most cases greater during the census year ended June 1, 1936 than during the previous census year period. Further evidence of this will be found in Statement CXXXI where the percentages of unemployment in all industries on the first of June, 1931 and 1936 as compared with the percentage distribution of wage-earners losing time according to stated periods of unemployment during the census years ended June 1, 1931 and June 1, 1936 for the provinces of Manitoba, Saskatchewan, and Alberta.

CXXXI.—COMPARISON OF RATE OF UNEMPLOYMENT AMONG WAGE-EARNERS ON JUNE 1, AND OF DURATION OF UNEMPLOYMENT AMONG THOSE LOSING TIME DURING THE CENSUS YEARS, BY SEX, PRAIRIE PROVINCES, 1931 AND 1936

Item	P.C. of Wage-Earners Reporting No Job on June 1	P.C. of Wage-Earners Losing Time				
		20 or less Weeks	21-32 Weeks	33-48 Weeks	49 and over Weeks	
MANITOBA						
Males.....	1931	21.52	37.24	29.63	22.21	10.92
	1936	18.43	27.96	26.85	25.39	19.30
Females.....	1931	9.55	48.44	23.32	17.68	10.56
	1936	8.43	34.08	24.53	29.29	12.10
SASKATCHEWAN						
Males.....	1931	20.57	33.53	35.70	24.61	6.16
	1936	13.04	27.57	30.88	30.43	11.13
Females.....	1931	8.30	43.62	27.07	19.93	9.38
	1936	6.69	31.67	27.40	33.68	7.25
ALBERTA						
Males.....	1931	19.12	36.43	34.67	22.74	6.16
	1936	14.26	29.74	31.30	24.66	14.30
Females.....	1931	7.99	47.67	25.82	17.56	8.86
	1936	7.27	31.54	26.13	31.63	10.70

The percentages in Statement CXXXI clearly show that in each of the Prairie Provinces the rate of unemployment among males on the first of June, 1936 was lower than in 1931—in fact about one-third lower in Saskatchewan and Alberta. On the other hand, an examination of the percentage distribution of wage-earners losing time discloses the existence of more long-time unemployment in 1936 than at the 1931 Census. In each province the proportion losing between 33 and 48 weeks was greater in 1936 than in 1931, while the percentage losing 49 weeks and over (roughly a year or more) in 1936 was almost double the 1931 figures shown for Manitoba and for Saskatchewan and more than double the 1931 percentage in the case of Alberta. The figures for females, though not so striking, show the same tendency. This result is closely in accord with the British experience. In the analysis of the British unemployment insurance records, already referred to, Beveridge* concludes: "In September, 1929 nearly 90 p.c. of the applicants had been out of work for less than six months, and less than 5 p.c. had been out for twelve months or more. In September, 1936, these proportions have become 66 p.c. and 24 p.c., respectively. The legacy of the great depression is a mass of long-period unemployment."

Further evidence of the extent of long-period unemployment in the Prairie Provinces at the 1936 Census is contained in Table 20 where the percentages of total wage-earners reporting no weeks of employment during the 12 months ended June 1, 1936 and the percentages reporting 1-11 weeks, or roughly the proportion with less than 3 months' employment during the census year, are given by industries. Viewed in another way the statement reveals the amount of casual employment in these industries during the year period prior to the date of the census. The segregation of wage-earners with no employment at all during the census year from those showing 1-11 weeks of employment brings out distinctly the proportion of casual employment in each industry.

The industries listed in Table 20 are those with 100 or more wage-earners in the industry in the three Prairie Provinces combined at the 1936 Census. Industries with less than this number are added as a group total at the foot of the statement. The industries listed are arranged in the order of the percentage importance of the wage-earners reporting less than 12 weeks of employment during the census year ended June 1, 1936. As in Table 19 a few industries were combined where there was difficulty in distinguishing wage-earners employed in the manufacturing of specific products from those engaged in their sale or repair. As giving greater assurance that the figures in Table 19 correctly represent the proportions of workers having an attachment to these industries, though very little employment in them, the percentages are based on those wage-earners who reported as usual industry the same industry as that in which employed at the census date, or in which last employed previous to that date.

It will be observed that several of the industries recording the greatest decline in the number of wage-earners between 1931 and 1936, as shown in Table 19, are in Table 20 included among those with the highest percentages of wage-earners with no employment whatsoever during the 12 months prior to the census date, June 1, 1936. Incidentally, industries with less than 100 wage-earners in the three provinces combined in 1936 showed 9.51 p.c. of their number with no employment during the census year as compared with 5.39 p.c. for the industries with 100 or more wage-earners taken as a group.

Age and Unemployment.—Basing his conclusions upon the records of unemployment insurance in Great Britain, Beveridge* enunciates the following three propositions: (a) the risk of being unemployed is half as much again from 60 to 64 as from 35 to 44 years of age; (b) the risk of losing employment is much the same from 60 to 64 as from 35 to 44; (c) the risk of unemployment prolonged for a year or more is two and a half times as great at the later age as at the earlier.

Data from the 1936 Census showing the incidence of unemployment by age tend to confirm these propositions, though, of course, the ratios, partly for the reason given in the next sentence are not exactly the same. Figures are not available for the age group 60-64 years, but a comparison can be made for males between the age groups 35-44 years, and 55-64 years of age. There is no information from the census to show the number of wage-earners of various ages falling out of employment at particular dates. However, each unemployed wage-earner on the census date was asked to state the period of his unemployment or length of time since last employed. This information was tabulated, the shortest period shown in the tabulation being

*See footnote, p. 269.

less than 13 weeks (or about 3 months) of unemployment prior to June 1, 1936. The percentage of wage-earners out of work on June 1, 1936 who had been unemployed less than 13 weeks is used in Statement CXXXII to test the validity of proposition (b) with respect to the unemployment at the 1936 Census of the Prairie Provinces, viz., that the risk of losing employment is much the same from 60 to 64 as from 35 to 44 years of age.

CXXXII.—COMPARISON OF DURATION OF UNEMPLOYMENT AMONG MALE WAGE-EARNERS 35-44 AND 55-64 YEARS OF AGE, UNEMPLOYED ON JUNE 1, PRAIRIE PROVINCES, 1936

Age Group	P.C. Unemployed		
	Any Period	Less than 13 Weeks	Over a Year
MANITOBA			
35-44.....	18.50	3.58	8.48
55-64.....	21.39	2.96	9.93
SASKATCHEWAN			
35-44.....	13.85	3.78	2.47
55-64.....	19.75	4.11	4.43
ALBERTA			
35-44.....	15.17	3.40	4.00
55-64.....	20.37	2.89	7.58

Statement CXXXII shows that although the percentage of males in the age group 55-64 years, unemployed any period on the census date, June 1, 1936, was considerably greater than for the males 35-44 years, in each province, being almost half as much again in Saskatchewan, the percentage that had been unemployed 13 weeks or less on that date actually represented a smaller proportion of total wage-earners in the older age group than in the younger, in Manitoba and Alberta, and only a slightly higher percentage in Saskatchewan. These results correspond very closely with the conclusions reached by Beveridge* in his analysis of an entirely different set of data, which are contained in propositions (a) and (b) in the first paragraph of this section. Statement CXXXII further shows that unemployment of over a year's duration was much more characteristic of the wage-earners in the older age group than among those 35-44 years of age. This has been the experience in Great Britain, as enunciated in proposition (c) above.

*See footnote, p. 269.

PART II

TABLE 1. Estimates of employment, unemployment and normally gainfully occupied, with basic data, May 31, 1931-June 30, 1936

(000's omitted)

Month	Estimate of Employment and Unemployment						Basic Data Used in Estimate			
	Index of Estimated P.C. Employed	Estimated P.C. Employed	No. of Wage-Earners Employed	No. of Wage-Earners (Col. 3 + Col. 2)	No. of Wage-Earners Unemployed (Col. 4 - Col. 3)	No. of Persons in Gainful Occupations	No. of Independent or "No Pay" Workers (Col. 6 - Col. 4)	Bureau's Index of No. Employed (base May, 1931)	P.C. Employed (corrected labour union figures)	Wage-Earning Jobs per Gainfully Occupied Person (Col. 8 ÷ Index of Col. 6)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
May, 1931....	100-0	82-9 ¹	2,133	2,573 ²	440	3,927	1,354	100-0	82-9	100-0
June.....	100-1	83-0	2,132	2,569	437	3,931	1,362	100-2	83-2	100-1
July.....	100-7	83-5	2,166	2,594	428	3,939	1,345	101-5	83-3	101-2
August.....	101-7	84-3	2,201	2,611	410	3,944	1,333	103-4	83-5	103-0
September.....	100-1	83-0	2,144	2,583	439	3,953	1,370	102-2	80-8	101-5
October.....	98-6	81-7	2,108	2,580	472	3,962	1,382	99-4	80-6	98-5
November.....	96-6	80-1	2,051	2,561	510	3,967	1,406	95-7	80-0	94-8
December.....	92-5	76-7	1,913	2,494	581	3,972	1,478	88-4	77-6	87-4
January, 1932	91-3	75-7	1,878	2,481	603	3,981	1,500	86-6	76-6	85-4
February.....	91-1	75-5	1,858	2,461	603	3,986	1,525	85-6	77-0	84-3
March.....	90-5	75-0	1,839	2,452	613	3,994	1,542	84-5	77-6	83-1
April.....	89-6	74-3	1,837	2,472	635	3,999	1,527	84-5	74-9	83-0
May.....	90-3	74-9	1,871	2,498	627	4,008	1,510	86-0	75-4	84-2
June.....	90-3	74-9	1,863	2,487	624	4,015	1,528	85-6	75-7	83-8
July.....	89-1	73-9	1,820	2,465	645	4,023	1,560	83-3	75-0	81-3
August.....	89-0	73-8	1,815	2,459	644	4,027	1,568	83-0	75-5	81-0
September.....	89-5	74-2	1,829	2,465	636	4,034	1,569	83-7	76-7	81-5
October.....	88-3	73-2	1,796	2,454	658	4,038	1,584	81-8	75-3	79-6
November.....	87-3	72-4	1,764	2,436	672	4,045	1,600	80-3	74-6	78-0
December.....	84-6	70-1	1,670	2,382	712	4,049	1,667	75-8	71-7	73-5
January, 1933	84-0	69-6	1,643	2,361	718	4,057	1,690	74-3	72-1	71-9
February.....	84-1	69-7	1,641	2,354	713	4,065	1,711	74-2	72-9	71-7
March.....	84-0	69-6	1,622	2,330	708	4,069	1,739	73-4	73-3	70-8
April.....	84-8	70-3	1,657	2,357	700	4,076	1,719	74-9	74-2	72-2
May.....	86-4	71-6	1,717	2,398	681	4,080	1,682	77-9	74-5	75-0
June.....	88-8	73-6	1,700	2,432	649	4,087	1,655	81-0	76-7	78-4
July.....	90-3	74-9	1,845	2,463	618	4,091	1,628	84-1	77-4	80-7
August.....	91-0	75-4	1,872	2,483	611	4,099	1,615	85-4	77-1	81-8
September.....	92-3	76-5	1,909	2,495	586	4,102	1,607	87-3	78-7	83-5
October.....	92-8	76-9	1,932	2,512	580	4,109	1,597	88-1	78-0	84-2
November.....	92-8	76-9	1,943	2,527	584	4,116	1,589	88-6	78-0	84-5
December.....	90-8	75-3	1,891	2,498	617	4,120	1,622	85-5	77-3	81-5
January, 1934	92-2	76-4	1,935	2,533	598	4,124	1,591	88-2	77-3	84-0
February.....	93-4	77-4	1,965	2,539	574	4,128	1,589	89-5	78-4	85-2
March.....	92-6	76-7	1,938	2,527	589	4,136	1,609	88-1	78-8	83-7
April.....	93-4	77-4	1,955	2,526	571	4,140	1,614	88-8	80-4	84-3
May.....	96-0	79-6	2,046	2,570	524	4,147	1,577	93-2	81-3	88-3
June.....	98-7	81-8	2,080	2,543	463	4,152	1,609	97-5	82-0	92-2
July.....	97-9	81-2	2,056	2,532	476	4,160	1,628	96-4	81-9	91-0
August.....	97-6	80-9	2,035	2,515	482	4,165	1,645	95-4	83-3	89-9
September.....	98-2	81-4	2,058	2,528	470	4,173	1,645	96-5	83-3	90-8
October.....	98-4	81-6	2,063	2,528	465	4,177	1,649	96-7	83-0	90-9
November.....	97-1	80-5	2,037	2,530	493	4,185	1,655	95-5	81-9	89-6
December.....	94-3	78-2	1,943	2,485	542	4,193	1,708	91-1	81-5	85-3
January, 1935	94-2	78-1	1,947	2,493	546	4,198	1,705	91-3	81-3	85-4
February.....	95-2	78-9	1,980	2,517	531	4,205	1,688	93-1	81-2	86-9
March.....	93-8	77-8	1,924	2,473	549	4,209	1,730	90-2	82-5	84-1
April.....	94-7	78-5	1,960	2,497	537	4,217	1,729	91-9	82-2	85-6
May.....	96-3	79-8	2,009	2,518	509	4,221	1,703	94-2	84-2	87-5
June.....	97-3	80-7	2,048	2,538	490	4,226	1,688	96-0	83-5	89-2
July.....	98-3	81-5	2,082	2,555	473	4,234	1,679	97-6	84-1	90-5
August.....	99-4	82-4	2,114	2,566	459	4,238	1,672	99-1	85-2	91-8
September.....	101-7	84-3	2,184	2,591	407	4,246	1,655	102-4	86-5	94-7
October.....	102-7	85-1	2,218	2,606	388	4,250	1,644	104-0	86-4	96-1
November.....	100-8	83-6	2,154	2,577	423	4,257	1,680	101-0	86-5	93-2
December.....	97-2	80-6	2,041	2,532	491	4,261	1,729	95-7	85-3	88-2
January, 1936	97-3	80-7	2,026	2,511	485	4,266	1,755	95-0	-	87-5
February.....	97-9	81-2	2,037	2,509	472	4,271	1,762	95-5	-	87-8
March.....	96-7	80-2	2,005	2,500	495	4,277	1,777	94-0	-	86-3
April.....	97-6	80-9	2,048	2,532	484	4,282	1,750	96-0	-	88-1
May.....	99-0	82-1	2,101	2,559	458	4,288	1,729	98-5	-	90-2
June.....	100-7	83-5	2,154	2,580	426	4,294	1,714	101-0	-	92-4

¹ i.e., number at work June 1, 1931, according to the census plus number not at work through causes other than "no job" or "temporary lay-off."

² The census figure for June 1, 1931, was 83-0. It was not considered necessary to correct to this census figure as it was desirable to show how closely the estimated came to the census. However, this makes a difference of 3,000 in the wage-earners, the census figures being 2,570,000.

TABLE 2. Estimates of employment and unemployment, June 30, 1920-May 31, 1931

(000's omitted)

Month	Index of P.C. Employed (base 1926)	P.C. Employed Corrected for Size of Sample (2)	P.C. Unemployed (3)	No. Employed (4)	No. of Wage-Earners (5)	No. Unemployed (6)
	(1)	(2)	(3)	(4)	(5)	(6)
June, 1920.....	102.3	97.5	2.5	-	-	-
July.....	101.0	96.3	3.7	-	-	-
August.....	100.6	95.9	4.1	-	-	-
September.....	101.8	97.0	3.0	-	-	-
October.....	104.3	99.3	0.7	-	-	-
November.....	100.6	95.9	4.1	-	-	-
December.....	96.1	91.6	8.4	-	-	-
January, 1921.....	94.9	90.4	9.6	1,860	2,058	198
February.....	92.3	88.0	12.0	1,817	2,065	248
March.....	94.1	89.7	10.3	1,735	1,934	199
April.....	94.3	89.9	10.1	1,735	1,930	195
May.....	95.2	90.7	9.3	1,789	1,972	183
June.....	96.9	92.5	10.5	1,807	2,019	212
July.....	98.7	94.1	5.9	1,835	1,950	115
August.....	100.8	96.1	3.9	1,832	1,906	74
September.....	100.2	95.5	4.5	1,862	1,950	88
October.....	99.7	95.0	5.0	1,862	1,960	98
November.....	93.8	89.4	10.6	1,801	2,015	214
December.....	89.2	85.0	15.0	1,608	1,892	284
January, 1922.....	90.3	86.1	13.9	1,629	1,892	263
February.....	95.0	90.5	9.5	1,690	1,897	177
March.....	94.9	90.4	9.6	1,669	1,846	177
April.....	93.8	89.4	10.6	1,719	1,923	204
May.....	95.7	91.2	8.8	1,842	2,020	178
June.....	99.4	94.7	5.3	1,880	1,985	105
July.....	100.7	96.0	4.0	1,921	2,001	80
August.....	101.0	96.3	3.7	1,934	2,008	74
September.....	102.1	97.3	2.7	1,953	2,007	54
October.....	100.8	96.1	3.9	1,978	2,058	80
November.....	98.3	93.7	6.3	1,964	2,096	132
December.....	96.2	91.6	6.4	1,780	1,902	122
January, 1923.....	96.5	92.0	8.0	1,848	2,009	161
February.....	98.1	93.5	6.5	1,857	1,986	129
March.....	97.7	93.1	6.9	1,808	1,942	134
April.....	100.0	95.3	4.7	1,857	1,980	93
May.....	100.2	95.5	4.5	2,009	2,104	95
June.....	101.4	96.8	3.4	2,053	2,125	72
July.....	101.9	97.1	2.9	2,068	2,130	62
August.....	102.6	97.8	2.2	2,064	2,110	46
September.....	102.8	98.0	2.0	2,052	2,096	42
October.....	99.9	95.2	4.8	2,039	2,142	103
November.....	98.4	93.8	6.2	1,976	2,107	131
December.....	97.5	92.9	7.1	1,832	1,972	140
January, 1924.....	97.2	92.6	7.4	1,871	2,021	150
February.....	96.9	92.3	7.7	1,873	2,029	156
March.....	97.0	93.3	6.7	1,844	1,976	132
April.....	99.7	95.0	5.0	1,894	1,994	100
May.....	97.4	92.8	7.2	1,966	2,119	153
June.....	99.0	94.3	5.7	1,980	2,100	120
July.....	99.4	94.7	5.3	1,953	2,062	109
August.....	98.2	93.6	6.4	1,921	2,052	131
September.....	98.8	94.2	5.8	1,937	2,059	119
October.....	97.8	93.2	6.8	1,919	2,059	140
November.....	94.9	90.4	9.6	1,874	2,074	199
December.....	92.9	88.5	11.5	1,731	1,966	225
January, 1925.....	94.3	89.9	10.1	1,776	1,976	200
February.....	95.2	90.7	9.3	1,798	1,982	184
March.....	96.0	91.5	8.5	1,801	1,968	167
April.....	96.8	91.3	8.7	1,875	2,054	179
May.....	97.6	93.0	7.0	1,950	2,097	147
June.....	98.5	93.9	6.1	1,998	2,128	130
July.....	99.5	94.8	5.2	1,989	2,098	109
August.....	100.3	95.6	4.4	1,994	2,086	92
September.....	98.8	94.2	5.8	2,030	2,155	125
October.....	99.5	94.8	5.2	2,005	2,115	110
November.....	98.8	94.2	5.8	1,968	2,089	121
December.....	96.9	92.0	8.0	1,850	2,011	161

*Census figures.

†The number employed does not vary exactly with the Bureau's employment index, especially before 1926. Corrections were made in this index for the whole period 1921-1931 on the basis of the number of firms reporting. This was necessary in view of the ascertained fact that the employment reported by firms was a much smaller sample of the Census of 1921 than of 1931. However, the corrections thus made from 1926 on were small as the greatest care has been taken since that time when constructing the index to allow for firms existing in the base year, but not reporting until a later year.

TABLE 2. Estimates of employment and unemployment, June 30, 1920-May 31, 1931—Con.

(000's omitted)

Month	Index of P.C. Employed (base 1920) (1)	P.C. Employed Corrected for Size of Sample (2)	P.C. Un- employed (3)	No. Employed ¹ (4)	No. of Wage- Earners (5)	No. Unem- ployed (6)
January, 1926.....	96.3	91.8	8.2	1,873	2,040	167
February.....	96.3	91.8	8.2	1,889	2,058	169
March.....	97.3	92.7	7.3	1,889	2,038	149
April.....	97.3	92.7	7.3	1,948	2,101	153
May.....	99.8	95.1	4.9	2,088	2,193	107
June.....	100.5	95.8	4.2	2,143	2,237	94
July.....	102.3	97.5	2.5	2,154	2,209	55
August.....	102.2	97.4	2.6	2,168	2,226	58
September.....	102.4	97.6	2.4	2,175	2,228	53
October.....	103.8	98.9	1.1	2,125	2,149	24
November.....	101.0	96.3	3.7	2,089	2,109	80
December.....	101.0	96.3	3.7	1,959	2,034	75
January, 1927.....	99.1	94.4	5.6	1,973	2,090	117
February.....	100.6	95.9	4.1	1,993	2,078	85
March.....	100.2	95.5	4.5	1,993	2,087	94
April.....	101.2	96.4	3.6	2,082	2,180	78
May.....	101.5	98.7	3.3	2,191	2,269	75
June.....	104.0	99.1	0.9	2,243	2,263	20
July.....	103.7	98.8	1.2	2,250	2,288	27
August.....	103.4	98.5	1.5	2,270	2,305	35
September.....	104.1	99.2	0.8	2,257	2,275	18
October.....	103.3	98.4	1.6	2,227	2,263	36
November.....	101.3	96.5	3.5	2,213	2,293	80
December.....	101.2	96.4	3.6	2,061	2,138	77
January, 1928.....	100.1	95.4	4.6	2,087	2,188	101
February.....	100.1	95.4	4.6	2,100	2,201	101
March.....	101.3	96.5	3.5	2,095	2,171	76
April.....	102.6	97.8	2.2	2,188	2,237	49
May.....	103.5	98.6	1.4	2,331	2,304	33
June.....	103.0	98.2	1.8	2,406	2,453	44
July.....	103.8	98.9	1.1	2,442	2,496	27
August.....	103.8	98.9	1.1	2,458	2,465	27
September.....	103.8	98.9	1.1	2,494	2,491	27
October.....	102.6	98.1	1.9	2,450	2,483	47
November.....	101.9	97.1	2.9	2,391	2,462	71
December.....	99.8	95.1	4.9	2,236	2,351	115
January, 1929.....	99.4	94.7	5.3	2,264	2,391	127
February.....	98.6	94.0	6.0	2,282	2,428	146
March.....	100.1	95.4	4.6	2,264	2,373	109
April.....	99.4	94.7	5.3	2,353	2,516	153
May.....	101.5	96.7	3.3	2,504	2,539	85
June.....	103.1	98.3	1.7	2,556	2,600	44
July.....	103.0	98.2	1.8	2,619	2,667	48
August.....	103.0	98.2	1.8	2,599	2,647	48
September.....	103.0	98.2	1.8	2,576	2,623	47
October.....	101.4	96.6	3.4	2,556	2,646	90
November.....	97.8	93.2	6.8	2,443	2,821	178
December.....	95.5	91.0	9.0	2,282	2,508	226
January, 1930.....	93.2	88.8	11.2	2,291	2,580	289
February.....	91.8	87.5	12.5	2,293	2,589	323
March.....	93.1	88.7	11.3	2,214	2,496	282
April.....	93.7	89.3	10.7	2,288	2,562	274
May.....	90.3	86.1	13.9	2,391	2,777	386
June.....	90.8	86.5	13.5	2,442	2,823	381
July.....	92.0	87.7	12.3	2,440	2,792	342
August.....	91.1	86.8	13.2	2,365	2,750	384
September.....	93.4	89.0	11.0	2,358	2,683	295
October.....	92.4	88.1	11.9	2,320	2,633	313
November.....	89.3	85.1	14.9	2,230	2,820	390
December.....	88.0	83.9	17.9	2,063	2,549	466
January, 1931.....	87.5	83.4	16.6	2,071	2,483	412
February.....	87.4	83.3	16.7	2,062	2,475	413
March.....	88.2	84.1	15.9	2,053	2,441	388
April.....	88.9	84.7	15.3	2,103	2,483	380
May.....	87.1	83.0 ¹	17.0 ¹	2,133 ¹	2,570 ¹	437 ¹

TABLE 3. Normally gainfully occupied population as distributed among (1) rural residence, (2) agriculture, (3) urban residence and (4) "no pay" agricultural workers, May 31, 1931-December 31, 1935

(000's omitted)

Month	Normally Gainfully Occupied Population					Normally "No Pay", Agricultural Workers
	Total	Rural			Urban (Col. 1 -Col. 2)	
		Total	In Agriculture (Col. 2 -Col. 3)	In Occupations Other than Agriculture (Col. 2 -Col. 3)		
(1)	(2)	(3)	(4)	(5)	(6)	
May, 1931.....	3,927	1,787	1,131	656	2,140	295
June.....	3,931	1,790	1,133	657	2,141	295
July.....	3,939	1,793	1,135	658	2,146	296
August.....	3,944	1,796	1,137	659	2,148	296
September.....	3,953	1,799	1,139	660	2,154	297
October.....	3,962	1,803	1,141	662	2,159	297
November.....	3,967	1,806	1,143	663	2,161	298
December.....	3,972	1,809	1,145	664	2,163	298
January, 1932.....	3,981	1,812	1,147	665	2,169	299
February.....	3,986	1,816	1,149	667	2,140	299
March.....	3,994	1,819	1,151	668	2,175	300
April.....	3,999	1,824	1,153	671	2,175	300
May.....	4,008	1,829	1,155	674	2,179	301
June.....	4,015	1,831	1,157	674	2,184	301
July.....	4,023	1,834	1,159	675	2,189	302
August.....	4,027	1,836	1,160	676	2,191	302
September.....	4,034	1,839	1,162	677	2,195	303
October.....	4,038	1,842	1,164	678	2,196	303
November.....	4,045	1,845	1,166	679	2,200	304
December.....	4,049	1,845	1,168	680	2,201	304
January, 1933.....	4,057	1,852	1,169	683	2,205	305
February.....	4,065	1,855	1,171	684	2,210	305
March.....	4,069	1,859	1,173	686	2,210	306
April.....	4,076	1,862	1,175	687	2,214	306
May.....	4,080	1,866	1,177	689	2,214	307
June.....	4,087	1,869	1,179	690	2,218	307
July.....	4,091	1,872	1,181	691	2,219	307
August.....	4,098	1,875	1,182	693	2,223	308
September.....	4,102	1,878	1,184	694	2,224	308
October.....	4,109	1,882	1,186	696	2,227	308
November.....	4,116	1,886	1,188	698	2,230	309
December.....	4,120	1,889	1,190	699	2,231	309
January, 1934.....	4,124	1,893	1,191	702	2,231	309
February.....	4,128	1,896	1,193	703	2,232	310
March.....	4,136	1,900	1,195	705	2,236	310
April.....	4,140	1,904	1,197	707	2,236	310
May.....	4,147	1,908	1,199	709	2,239	311
June.....	4,152	1,911	1,201	710	2,241	311
July.....	4,160	1,915	1,203	712	2,245	312
August.....	4,165	1,918	1,205	713	2,247	312
September.....	4,173	1,922	1,207	715	2,251	313
October.....	4,177	1,925	1,209	716	2,252	313
November.....	4,185	1,929	1,210	719	2,256	314
December.....	4,193	1,932	1,212	720	2,261	314
January, 1935.....	4,198	1,936	1,214	722	2,262	315
February.....	4,205	1,939	1,216	723	2,266	315
March.....	4,209	1,943	1,218	725	2,266	316
April.....	4,217	1,946	1,220	726	2,271	316
May.....	4,221	1,950	1,222	728	2,271	318
June.....	4,226	1,954	1,224	730	2,272	318
July.....	4,234	1,959	1,227	732	2,275	319
August.....	4,238	1,963	1,230	733	2,275	319
September.....	4,246	1,968	1,233	735	2,278	320
October.....	4,250	1,972	1,236	736	2,278	320
November.....	4,257	1,977	1,239	739	2,280	321
December.....	4,261	1,981	1,241	740	2,280	321

TABLE 4. Normally gainfully occupied population probably most affected by decrease in employment, May 31, 1931-May 31, 1933¹

(000's omitted)

Month	Probable Increase in Rural "No Pay" Workers Displacing Farm Labour (1)	Increase in Non-Rural Normally Gainfully Occupied		All Persons 17 Years and under Normally Gainfully Occupied (rural) (4)	Total of Cols. 1, 2 and 3 (5)	Probable Gradual Elimination of Normally Gainfully Occupied 17 Years and under (6)	Total Probably Thus Eliminated from Wage-Earners (Col. 5 + Col. 6) (7)
		18-24 Years (2)	65 Years and over (3)				
May, 1931.....	-	-	-	106	-	-	-
June.....	3	1	-	106	4	5	9
July.....	6	1	-	106	7	9	16
August.....	10	2	-	106	12	14	26
September.....	13	2	-	106	15	18	33
October.....	17	3	-	106	20	23	43
November.....	20	3	-	106	23	27	50
December.....	24	4	1	106	29	32	61
January, 1932.....	27	4	1	106	32	36	68
February.....	31	5	1	106	37	41	78
March.....	34	5	1	106	40	45	85
April.....	38	6	1	106	45	50	95
May.....	42	6	1	106	49	55	104
June.....	45	7	1	106	53	59	112
July.....	48	7	2	106	57	64	121
August.....	51	8	2	106	61	68	129
September.....	54	9	2	106	65	73	138
October.....	57	9	3	106	69	77	146
November.....	60	10	3	106	73	81	154
December.....	63	11	3	106	77	85	162
January, 1933.....	67	11	3	105	81	89	170
February.....	70	12	4	105	86	93	179
March.....	73	13	4	105	90	97	187
April.....	76	13	4	105	93	101	194
May.....	79	14	4	105	97	106	202

¹The figures of this table have not been used in the construction of the estimate. They are used solely as checks. The question was whether the decrease in the number of wage-earners shown in Table 1 could be explained by very probable events, viz., the increase in "no pay" farm workers displacing farm labour and the elimination from the ranks of wage-earners in urban centres of the following persons who would normally be gainfully occupied: (1) all new persons at ages 18-24 and 65 and over; (2) all new persons 17 and under which is equivalent to all persons at that age. In Table 1 the number of wage-earners are seen to have decreased from May, 1931 to the low point in March, 1933 by 243,000.

In this table the persons mentioned were sufficient to eliminate 200,000 of these, leaving about 43,000 due to such causes as back-to-the-country and back-to-independent-worker movements. This is certainly not excessive.

TABLE 5. Net gain in population from migration, by single years (ended June 30), 1921-1931

Year (ended June 30)	Immigrant Arrivals	Emigrants ¹	Net Gain
1921-22.....	73,619	66,384	7,235
1922-23.....	88,747	130,988	-42,241
1923-24.....	160,853	213,915	-53,062
1924-25.....	90,566	119,063	-28,517
1925-26.....	111,919	105,479	6,440
1926-27.....	173,121	95,647	77,474
1927-28.....	145,090	87,466	57,624
1928-29.....	174,545	81,953	92,592
1929-30.....	135,428	78,852	56,576
1930-31.....	48,521	39,174	9,347

¹Immigrant aliens entering the United States with last permanent residence British North America and immigrants to the United Kingdom with last permanent residence British North America, taken as representative of the bulk of the emigration from Canada

TABLE 6. Population 10 years of age and over, by age group¹ and sex, Canada, 1931, and estimated, 1932-1941

(000's omitted)

Age Group	Population										
	1931	Estimated									
		1932	1933	1934	1935	1936	1937	1938	1939	1940	1941
MALES											
10 years and over ²	4,256	4,333	4,400	4,475	4,548	4,615	4,677	4,744	4,802	4,854	4,892
10-13.....	438	450	450	450	456	452	448	446	441	428	406
14.....	105	103	107	109	110	115	113	113	113	111	110
15.....	103	105	103	107	109	110	114	113	112	113	111
16-17.....	215	212	208	207	209	215	224	230	227	225	224
18-19.....	207	212	214	210	208	206	208	214	223	228	226
20-24.....	464	474	488	500	511	518	521	517	516	517	529
25-34.....	778	797	818	834	852	860	882	900	921	943	960
35-44.....	707	710	707	700	711	712	715	720	732	742	748
45-54.....	589	598	612	629	637	646	650	658	661	666	664
55-64.....	356	369	381	399	413	434	452	471	487	500	520
65-69.....	120	124	128	130	131	136	139	145	146	156	158
70 and over.....	174	170	188	191	195	205	211	217	223	225	236
FEMALES											
10 years and over ²	3,910	3,987	4,067	4,140	4,213	4,283	4,351	4,421	4,488	4,543	4,589
10-13.....	428	441	450	452	446	443	438	436	432	422	403
14.....	103	100	104	108	114	113	113	110	110	108	107
15.....	102	102	100	104	108	114	112	113	110	110	108
16-17.....	211	208	204	202	203	211	221	226	225	222	220
18-19.....	200	208	210	207	203	201	202	210	220	225	224
20-24.....	447	459	475	488	501	507	512	507	506	507	519
25-34.....	717	734	755	773	790	809	837	862	882	914	931
35-44.....	628	630	640	640	653	655	658	661	670	680	688
45-54.....	485	495	509	524	533	544	554	566	575	585	591
55-64.....	306	315	324	338	348	365	378	394	407	418	435
65-69.....	110	114	114	118	116	122	122	127	128	136	137
70 and over.....	171	175	182	180	190	199	204	209	214	219	226

¹Corresponding to the age groups compiled by occupations.²Persons of unstated age are omitted.

TABLE 7. Number gainfully occupied 10 years of age and over, by age group and sex, 1931, and estimated by 1931 percentage of population gainfully occupied, Canada, 1932-1941
(000's omitted)

Age Group	Gainfully Occupied												
	Actual P.C. 1931	1931 Cen- sus	Estimated										
			1932	1933	1934	1935	1936	1937	1938	1939	1940	1941	
MALES													
10 years and over ¹	76.69	3,261 ¹	3,327	3,384	3,439	3,500	3,557	3,614	3,674	3,731	3,790	3,841	
10-13.....	1-11	5	5	5	5	5	5	5	5	5	5	5	
14.....	11-19	12	12	12	12	13	13	13	13	13	12	12	
15.....	20-26	27	28	27	28	29	31	30	30	30	30	29	
16-17.....	55-12	119	117	115	114	115	119	123	127	125	124	123	
18-19.....	80-33	166	170	172	169	165	165	167	172	179	183	182	
20-24.....	92-64	429	439	452	463	473	480	483	479	478	479	490	
25-34.....	97-73	759	779	799	815	833	840	862	880	900	921	938	
35-44.....	97-82	690	695	692	685	696	697	699	704	716	726	732	
45-54.....	96-61	568	578	591	608	615	624	628	636	639	643	641	
55-64.....	90-77	323	335	346	362	375	394	410	428	442	454	472	
65-69.....	75-48	91	94	95	98	99	103	105	109	110	118	119	
70 and over.....	42-00	73	75	78	80	82	86	89	91	94	95	99	
FEMALES													
10 years and over ¹	17.64	666 ¹	681	696	706	721	731	744	752	771	784	793	
10-13.....	0-13	1	1	1	1	1	1	1	1	1	1	1	
14.....	1-92	2	2	2	2	2	2	2	2	2	2	2	
15.....	6-00	6	6	6	6	6	7	7	7	7	7	6	
16-17.....	20-72	44	43	42	42	42	44	44	46	47	46	46	
18-19.....	40-39	81	84	85	84	82	81	82	85	89	91	90	
20-24.....	42-36	189	194	201	207	212	215	217	215	214	215	220	
25-34.....	21-73	156	159	164	168	173	176	182	187	193	199	202	
35-44.....	12-98	81	83	83	83	85	85	85	86	87	88	89	
45-54.....	11-54	56	57	59	60	62	63	64	65	66	68	68	
55-64.....	10-69	33	34	35	36	37	39	40	42	44	45	47	
65-69.....	8-61	10	10	10	10	10	11	11	11	11	12	12	
70 and over.....	4-59	8	8	8	9	9	9	9	10	10	10	10	

¹Calculation to the nearest thousand causes a slight difference between the age groups and the total in 1931.

²Persons of unstated age are omitted.

TABLE 8. Rural population 1931, and estimated rural population, by age group and sex, Canada, 1932-1935
(000's omitted)

Age Group	Rural Population				
	1931 Census	Estimated			
		1932	1933	1934	1935
MALES					
10 years and over ¹	2,024	2,064	2,101	2,137	2,176
10-13.....	224	230	232	234	234
14.....	53	53	56	56	59
15.....	53	53	53	55	56
16-17.....	109	108	106	106	108
18-19.....	105	108	109	107	105
20-24.....	228	237	246	254	260
25-34.....	352	363	376	387	401
35-44.....	309	310	308	306	312
45-54.....	264	268	273	279	281
55-64.....	173	178	182	189	194
65-69.....	62	63	64	66	66
70 and over.....	91	93	96	98	100

¹Persons of unstated age are omitted.

TABLE 8. Rural population 1931, and estimated rural population, by age group and sex, Canada, 1932-1935—Con.

(000's omitted)

Age Group	Rural Population				
	1931 Census	Estimated			
		1932	1933	1934	1935
FEMALES					
10 years and over ¹	1,639	1,682	1,724	1,764	1,806
10-13.....	215	222	226	228	228
14.....	60	50	53	64	67
15.....	49	50	60	53	54
16-17.....	96	98	99	100	103
18-19.....	84	91	95	98	98
20-24.....	173	181	191	202	215
25-34.....	278	284	291	298	306
35-44.....	246	249	251	251	256
45-54.....	195	199	204	209	212
55-64.....	129	133	136	141	145
65-69.....	47	49	49	50	50
70 and over.....	75	70	79	80	82

TABLE 9. Estimated rural population normally gainfully occupied, by age group and sex, Canada, 1931-1935

(000's omitted)

Age Group	Rural Gainfully Occupied					
	Actual P.C. 1931	Estimated No.				
		1931	1932	1933	1934	1935
BOTH SEXES ²						
10 years and over ¹		1,787	1,829	1,866	1,908	1,950
10-17.....		106	106	105	107	110
18-19.....		119	124	125	125	125
20-24.....		284	295	309	322	332
25-44.....		738	752	765	776	796
45-64.....		278	282	286	293	296
65-64.....		171	175	180	186	191
65 and over.....		91	95	96	99	100
MALES						
10 years and over ¹		1,520	1,553	1,581	1,613	1,648
10-13.....	1-11	2	3	3	3	3
14.....	11-18	6	6	6	6	7
15.....	26-56	14	14	14	15	15
16-17.....	55-12	60	69	58	58	60
18-19.....	80-33	85	87	87	86	85
20-24.....	92-64	211	219	228	236	241
25-34.....	97-73	344	355	367	379	392
35-44.....	97-82	302	303	302	299	305
45-54.....	96-61	255	259	263	268	272
55-64.....	90-77	157	161	163	171	175
65-69.....	75-48	46	48	48	50	50
70 and over.....	42-00	38	39	40	41	42
FEMALES						
10 years and over ¹		267	276	285	295	302
10-13.....	0-13	-	-	-	-	-
14.....	1-92	1	1	1	1	1
15.....	6-00	3	3	3	3	3
16-17.....	20-72	20	20	20	21	21
18-19.....	40-39	34	37	38	39	40
20-24.....	42-36	73	76	81	86	91
25-34.....	21-73	60	62	63	65	66
35-44.....	12-95	32	32	33	33	33
45-54.....	11-54	23	23	23	24	24
55-64.....	10-69	14	14	15	15	15
65-69.....	8-01	4	4	4	4	4
70 and over.....	4-59	3	4	4	4	4

¹Persons of unstated age are omitted. Totals are addition of age groups, not calculated separately.²Addition of males and females, not calculated separately.

TABLE 10. Estimated rural population normally gainfully occupied in agriculture, by age group and sex, Canada, 1931-1935

(000's omitted)

Age Group	Occupied in Agriculture					
	Actual P.C. 1931	Estimated No.				
		1931	1932	1933	1934	1935
MALES						
10 years and over¹.....		1,107	1,131	1,152	1,174	1,196
10-17.....	22.41	99	99	100	101	102
18-19.....	68.33	72	74	74	73	72
20-24.....	65.02	148	154	160	155	160
25-34.....	60.73	214	220	228	235	243
35-44.....	63.25	195	196	195	194	197
45-54.....	67.17	177	180	183	187	189
55-64.....	70.05	121	125	128	132	136
65-69.....	66.33	41	42	42	44	44
70 and over.....	44.05	40	41	42	43	44
FEMALES						
10 years and over¹.....		24	24	25	25	26
10-17.....	0.30	1	1	1	1	1
18-19.....	1.07	1	1	1	1	1
20-24.....	0.74	1	1	1	1	2
25-34.....	0.55	2	2	2	2	2
35-44.....	1.26	3	3	3	3	3
45-54.....	2.87	6	6	6	6	6
55-64.....	4.46	6	6	6	6	6
65-69.....	4.66	2	2	2	2	2
70 and over.....	3.25	2	2	3	3	3

¹Persons of unstated age are omitted. Totals are addition of age groups, not calculated separately.**TABLE 11. Estimated rural "no pay" workers, by age group, Canada, 1931-1935**

(000's omitted)

Age Group	Rural "No Pay" Workers					
	Actual P.C. of Rural Gain- fully Oc- cupied 1931	Estimated No.				
		1931	1932	1933	1934	1935
10 years and over¹.....		295	301	307	311	318
10-17.....	76.88	82	82	82	82	84
18-19.....	42.52	51	53	53	53	53
20-24.....	28.41	81	84	88	91	94
25-44.....	9.49	70	71	73	74	76
45-54.....	1.66	5	5	5	5	5
55-64.....	1.72	3	3	3	3	3
65 and over.....	3.40	3	3	3	3	3

¹Persons of unstated age are omitted. Totals are addition of age groups, not calculated separately.

TABLE 12. Labour union data, by months, June 30, 1920-December 31, 1935

Month	Registered Members (1)	No.		Unemployed Reporting Members		P.C. Reporting of Registered Members (8)
		Reporting		No. (4)	P.C. (5)	
		Unions (2)	Members (3)			
June, 1920.....	373,842	1,565	194,023	4,812	2.5	51.9
July.....	368,799	1,464	185,527	4,894	2.0	50.3
August.....	363,756	1,464	187,432	5,925	3.2	51.5
September.....	358,692	1,468	189,253	6,154	3.3	52.8
October.....	353,640	1,506	215,212	12,595	6.0	60.0
November.....	348,606	1,498	216,285	21,659	10.0	62.0
December.....	343,562	1,573	208,320	27,953	13.4	60.6
January, 1921.....	338,519	1,538	197,928	25,871	13.1	58.5
February.....	333,476	1,513	198,276	31,958	16.1	59.5
March.....	328,432	1,563	206,901	34,106	16.5	63.0
April.....	323,389	1,661	204,357	33,254	16.3	63.2
May.....	318,346	1,672	201,496	31,153	15.6	63.3
June.....	313,320	1,511	181,552	23,866	13.2	57.9
July.....	310,362	1,542	182,634	16,610	9.1	58.8
August.....	307,204	1,617	188,963	16,450	8.7	61.5
September.....	304,146	1,615	183,373	15,530	8.5	60.3
October.....	301,087	1,552	174,336	12,940	7.4	57.9
November.....	298,028	1,506	164,107	15,151	11.1	55.1
December.....	294,960	1,520	161,085	24,311	15.1	54.6
January, 1922.....	291,902	1,525	159,280	22,059	13.9	54.6
February.....	288,864	1,528	163,033	17,209	10.6	56.4
March.....	285,805	1,480	157,639	15,173	9.6	55.2
April.....	282,747	1,412	141,505	14,708	10.4	50.0
May.....	279,689	1,423	150,505	13,138	8.7	53.8
June.....	276,621	1,437	151,564	8,101	5.3	54.8
July.....	276,743	1,541	162,632	6,999	4.1	58.8
August.....	276,866	1,474	148,408	5,389	3.6	53.6
September.....	276,989	1,477	161,139	4,565	2.9	58.2
October.....	277,113	1,469	153,642	5,998	3.9	55.4
November.....	277,236	1,427	147,243	9,652	6.3	53.1
December.....	277,360	1,469	155,006	9,982	6.4	55.9
January, 1923.....	277,483	1,372	140,585	10,925	7.8	50.7
February.....	277,607	1,435	149,890	9,664	6.4	54.0
March.....	277,730	1,404	149,000	10,153	6.8	53.8
April.....	277,854	1,368	149,556	6,902	4.0	53.8
May.....	277,977	1,428	156,939	7,087	4.5	56.5
June.....	278,092	1,449	155,056	5,299	3.4	55.8
July.....	276,638	1,481	154,522	4,445	2.9	55.9
August.....	275,184	1,440	152,505	3,308	2.3	55.4
September.....	273,730	1,479	151,461	3,015	2.0	56.3
October.....	272,276	1,461	156,849	7,508	4.9	57.6
November.....	270,822	1,456	153,366	9,535	6.2	56.6
December.....	269,368	1,532	162,313	11,767	7.2	60.3
January, 1924.....	267,914	1,522	156,279	11,768	7.5	58.3
February.....	266,460	1,492	155,546	12,112	7.8	58.4
March.....	264,906	1,459	150,129	10,051	6.7	56.7
April.....	263,452	1,452	154,160	7,882	5.1	58.6
May.....	261,998	1,455	158,023	11,571	7.3	60.3
June.....	260,643	1,501	158,325	9,250	5.8	60.7
July.....	261,511	1,483	155,429	8,527	5.4	59.4
August.....	262,379	1,496	155,117	10,160	6.5	59.1
September.....	263,248	1,527	154,181	9,156	5.9	58.6
October.....	264,116	1,487	149,292	10,162	6.8	56.5
November.....	264,984	1,501	154,375	14,038	9.7	58.2
December.....	265,853	1,529	158,367	18,373	11.6	59.6
January, 1925.....	266,721	1,606	160,365	16,425	10.2	60.1
February.....	267,589	1,642	164,367	15,619	9.5	61.4
March.....	268,458	1,550	154,558	13,159	8.5	57.6
April.....	269,326	1,509	154,738	13,436	8.7	57.5
May.....	270,194	1,483	151,284	10,568	7.0	56.0
June.....	271,064	1,543	157,268	9,578	6.1	58.0
July.....	271,939	1,531	156,133	8,064	5.2	57.5
August.....	271,654	1,507	153,550	6,859	4.4	56.5
September.....	271,949	1,517	148,161	5,327	3.7	54.7
October.....	272,244	1,503	146,550	7,486	5.1	53.8
November.....	272,539	1,532	147,853	8,445	5.7	54.3
December.....	272,834	1,550	148,922	11,716	7.9	54.6
January, 1926.....	273,129	1,547	146,990	11,972	8.1	53.8
February.....	273,424	1,573	148,068	12,012	8.1	54.2
March.....	273,719	1,547	152,234	11,069	7.3	55.6
April.....	274,014	1,512	151,979	11,157	7.3	55.5
May.....	274,319	1,558	150,765	7,442	4.9	55.0
June.....	274,604	1,602	145,722	5,965	4.1	53.1
July.....	275,910	1,487	140,256	3,288	2.3	50.8
August.....	277,217	1,504	139,345	3,551	2.5	50.3
September.....	278,523	1,540	146,202	4,837	3.3	52.5
October.....	279,830	1,541	151,130	3,929	2.6	54.0
November.....	281,137	1,501	149,627	7,039	4.7	53.2
December.....	282,443	1,560	157,701	9,349	5.9	56.8

TABLE 12. Labour union data, by months, June 30, 1920-December 31, 1935—Con.

Month	No.			Unemployed Reporting Members		P.C. Reporting of Registered Members
	Registered Members	Reporting		No.	P.C.	
		Unions	Members			
	(1)	(2)	(3)	(4)	(5)	(6)
January, 1927.....	283,749	1,541	151,496	9,748	6.4	53.4
February.....	285,056	1,571	162,042	10,596	6.5	56.8
March.....	286,362	1,509	156,664	8,975	5.7	54.7
April.....	287,669	1,549	164,948	9,833	6.0	57.3
May.....	288,975	1,578	163,754	8,475	5.2	56.7
June.....	290,282	1,581	167,711	5,410	3.2	57.8
July.....	291,142	1,569	167,648	5,465	3.3	57.6
August.....	292,002	1,602	170,024	6,210	3.7	58.2
September.....	292,862	1,601	171,435	5,366	3.1	58.5
October.....	293,722	1,641	172,737	6,743	3.9	58.8
November.....	294,582	1,591	170,918	8,941	5.2	58.0
December.....	295,442	1,096	180,204	11,822	6.6	61.0
January, 1928.....	296,302	1,668	176,421	12,082	6.8	59.5
February.....	297,162	1,677	178,892	12,534	7.0	60.2
March.....	298,022	1,706	183,846	11,965	6.5	61.7
April.....	298,882	1,642	185,318	9,573	5.2	62.0
May.....	299,742	1,697	182,383	6,957	3.7	60.8
June.....	300,602	1,608	178,578	5,800	3.2	59.4
July.....	302,174	1,600	180,111	4,539	2.5	59.6
August.....	303,747	1,604	181,022	4,274	2.4	59.8
September.....	305,320	1,626	181,615	4,068	2.2	59.5
October.....	306,893	1,632	184,580	5,705	3.1	60.1
November.....	308,466	1,672	186,528	7,742	4.2	60.5
December.....	310,039	1,695	190,839	12,553	6.6	61.6
January, 1929.....	311,611	1,697	188,152	11,878	6.3	60.4
February.....	313,184	1,678	188,888	12,834	6.8	60.3
March.....	314,757	1,727	194,890	11,662	6.0	61.9
April.....	316,330	1,661	188,874	10,352	5.5	59.7
May.....	317,903	1,642	185,737	7,530	4.0	61.0
June.....	319,476	1,688	198,849	5,723	2.9	62.4
July.....	319,724	1,690	200,115	6,025	3.0	62.6
August.....	320,072	1,709	204,547	7,078	3.5	63.9
September.....	320,320	1,762	206,617	7,664	3.7	64.5
October.....	320,568	1,750	212,328	12,710	6.0	66.2
November.....	320,816	1,761	212,973	19,832	9.3	66.4
December.....	321,064	1,790	213,065	24,201	11.4	66.4
January, 1930.....	321,312	1,772	211,811	22,795	10.8	65.9
February.....	321,539	1,760	209,327	24,175	11.6	65.1
March.....	321,766	1,765	211,864	22,912	10.8	65.8
April.....	321,993	1,719	206,326	18,831	9.1	64.1
May.....	322,220	1,679	198,590	20,424	10.3	61.6
June.....	322,449	1,688	201,672	21,292	10.6	62.5
July.....	321,457	1,676	200,122	18,473	9.2	62.3
August.....	320,466	1,630	190,048	18,160	9.3	61.2
September.....	319,473	1,737	205,910	19,422	9.4	64.5
October.....	318,481	1,780	207,438	22,390	10.8	65.1
November.....	317,489	1,798	206,884	28,337	13.8	64.8
December.....	316,497	1,904	219,641	37,457	17.0	69.4
January, 1931.....	315,506	1,866	210,402	33,700	16.0	66.7
February.....	314,513	1,832	202,669	31,602	15.6	64.4
March.....	313,521	1,825	208,387	32,208	15.5	65.5
April.....	312,529	1,807	206,563	30,786	14.9	65.1
May.....	311,537	1,808	198,059	32,163	16.2	63.6
June.....	310,544	1,849	200,505	32,667	16.3	64.6
July.....	308,297	1,862	199,923	32,398	16.2	64.8
August.....	306,050	1,839	197,863	31,247	15.8	64.7
September.....	303,082	1,841	193,849	35,048	18.1	64.0
October.....	301,555	1,864	192,603	35,323	18.3	63.9
November.....	299,308	1,816	189,081	35,206	18.6	63.2
December.....	297,060	1,874	188,653	39,713	21.1	68.5
January, 1932.....	294,812	1,849	187,891	41,330	22.0	63.7
February.....	292,565	1,810	183,150	37,764	20.6	63.6
March.....	290,318	1,823	181,396	36,901	20.4	62.5
April.....	288,071	1,806	178,076	40,936	23.0	61.8
May.....	285,824	1,800	175,411	38,692	22.1	61.4
June.....	283,576	1,791	176,006	38,372	21.9	61.7
July.....	283,798	1,806	171,831	37,505	21.8	60.6
August.....	284,019	1,762	163,530	34,949	21.4	57.6
September.....	284,239	1,732	162,180	33,146	20.4	57.1
October.....	284,456	1,765	162,052	35,789	22.0	57.2
November.....	284,676	1,797	161,068	36,785	22.8	56.6
December.....	284,896	1,764	165,298	39,607	25.5	54.5
January, 1933.....	285,116	1,808	166,746	39,909	25.5	55.0
February.....	285,337	1,762	160,168	36,494	24.3	52.6
March.....	285,558	1,736	151,307	38,002	25.1	53.0
April.....	285,779	1,716	153,623	37,659	24.5	53.8
May.....	286,000	1,704	148,018	35,201	23.8	51.8
June.....	286,220	1,699	150,040	32,756	21.8	52.4
July.....	285,850	1,714	151,363	32,131	21.2	53.0
August.....	285,480	1,705	151,233	30,096	19.9	53.0
September.....	285,110	1,762	149,310	29,492	19.8	52.4
October.....	284,740	1,734	148,703	29,417	19.8	52.2
November.....	284,370	1,722	146,946	29,008	20.4	51.7
December.....	284,000	1,726	146,770	30,799	21.0	51.7

TABLE 12. Labour union data, by months, June 30, 1920-December 31, 1935—Con.

Month	No.			Unemployed Reporting Members		P.C. Reporting of Registered Members
	Registered Members	Reporting		No.	P.C.	
		Unions	Members			
	(1)	(2)	(3)	(4)	(5)	(6)
January, 1934.....	283,629	1,728	149,630	31,865	21.2	52.8
February.....	283,258	1,734	148,048	29,558	20.9	52.3
March.....	282,887	1,666	145,475	28,438	19.5	51.4
April.....	282,516	1,693	150,638	28,723	19.1	53.3
May.....	282,145	1,705	156,963	28,994	18.5	55.6
June.....	281,774	1,702	159,722	28,774	18.0	56.7
July.....	282,754	1,701	156,357	27,945	17.9	55.3
August.....	282,568	1,700	158,970	26,191	16.5	56.3
September.....	282,382	1,700	159,675	26,204	16.4	56.5
October.....	282,196	1,765	162,060	26,291	16.2	57.4
November.....	282,010	1,735	159,169	27,004	17.5	56.4
December.....	281,824	1,767	161,618	29,112	18.0	57.3
January, 1935.....	281,638	1,783	161,713	29,284	18.1	57.4
February.....	281,452	1,721	160,929	29,227	18.2	57.2
March.....	281,266	1,735	160,062	29,724	18.7	57.8
April.....	281,080	1,735	162,410	27,582	17.0	57.8
May.....	280,894	1,755	164,320	26,078	15.9	58.5
June.....	280,704	1,684	161,789	24,991	15.4	57.8
July.....	284,185	1,723	164,357	24,738	15.1	57.8
August.....	287,668	1,727	165,636	23,640	14.2	57.9
September.....	291,147	1,763	166,764	21,759	13.0	57.3
October.....	294,628	1,777	169,839	22,583	13.3	57.6
November.....	298,109	1,761	169,584	22,575	13.3	56.9
December.....	301,590	1,807	170,603	24,868	14.6	56.5

TABLE 13. Index of membership employed and reporting in labour unions and percentage of membership reporting, percentage employed, corrections and final corrected percentage employed, June 30, 1920-December 31, 1935

Month	Index of Membership (base 1925)		P.C. of Membership Reporting	P.C. Employed	Correction for Size of Sample	Further Correction for Decrease in Membership	Final Corrected P.C. Employed
	Employed	Reporting					
June, 1920.....	134.5	130.8	51.9	97.5	0.0		97.5
July.....	128.4	125.1	50.3	97.4	-1.1		96.3
August.....	129.0	126.4	51.5	96.8	-0.9		95.9
September.....	130.1	127.6	52.8	96.7	0.3		97.0
October.....	143.8	145.1	60.9	94.0	5.3		99.3
November.....	138.3	145.8	62.0	90.0	5.9		95.9
December.....	128.2	140.4	60.6	86.6	5.0		91.6
January, 1921.....	122.3	133.4	58.5	86.9	3.5		90.4
February.....	118.2	133.7	59.5	83.9	4.1		88.0
March.....	122.8	139.5	63.0	83.5	6.2		89.7
April.....	121.6	137.8	63.2	83.7	6.2		89.9
May.....	121.1	135.8	63.3	84.5	6.2		90.7
June.....	112.1	122.4	57.9	86.8	2.7		89.5
July.....	118.0	123.1	58.8	90.9	3.2		94.1
August.....	122.6	127.4	61.5	91.3	4.8		96.1
September.....	119.3	123.6	60.3	91.5	4.0		95.5
October.....	114.7	117.5	57.9	92.6	2.4		95.0
November.....	103.7	110.6	55.1	88.9	0.5		89.4
December.....	97.2	108.6	54.6	84.9	0.1		85.0
January, 1922.....	97.5	107.4	54.6	85.1	0.0		86.1
February.....	103.9	109.9	56.4	89.4	1.1		90.5
March.....	101.2	106.3	55.2	90.4	0.0		90.4
April.....	90.1	95.4	50.0	89.6	-0.2		89.4
May.....	97.6	101.5	53.8	91.3	-0.1		91.2
June.....	102.0	102.2	54.8	94.7	0.0		94.7
July.....	110.8	109.6	58.8	95.9	0.1		96.0
August.....	101.6	100.0	53.6	96.4	-0.1		96.3
September.....	111.3	108.7	58.2	97.2	0.1		97.3
October.....	104.9	103.6	55.4	96.1	0.0		96.1
November.....	98.2	99.3	53.1	93.8	-0.1		93.7
December.....	103.1	104.5	55.9	93.6	0.0		93.6
January, 1923.....	92.1	94.8	50.7	92.2	-0.2		92.0
February.....	99.7	101.1	54.0	93.6	-0.1		93.5
March.....	98.7	100.4	53.6	93.2	-0.1		93.1
April.....	101.4	100.8	53.8	95.4	-0.1		95.3
May.....	106.5	105.8	56.5	95.5	0.0		95.5
June.....	106.4	104.5	55.8	96.6	0.0		96.6
July.....	106.7	104.2	55.9	97.1	0.0		97.1
August.....	106.0	102.8	55.4	97.8	0.0		97.8
September.....	105.5	102.1	55.3	98.0	0.0		98.0
October.....	106.1	105.7	57.6	95.2	0.0		95.2
November.....	102.2	103.4	56.6	93.8	0.0		93.8
December.....	107.0	109.4	60.3	92.8	0.1		92.9

TABLE 13. Index of membership employed and reporting in labour unions and percentage of membership reporting, percentage employed, corrections and final corrected percentage employed, June 30, 1920-December 31, 1935—Con.

Month	Index of Membership (base 1925)		P.C. of Member- ship Reporting	P.C. Employed	Correction for Size of Sample	Further Correction for Decrease in Member- ship	Final Corrected P.C. Employed
	Employed	Reporting					
January, 1924.....	102.7	105.4	58.3	92.5	0.1		92.6
February.....	101.9	104.9	58.4	92.2	0.1		92.3
March.....	99.5	101.2	56.7	93.3	0.0		93.3
April.....	104.0	103.9	58.5	94.9	0.1		95.0
May.....	104.1	106.5	60.3	92.7	0.1		92.8
June.....	106.9	106.7	60.7	94.2	0.1		94.3
July.....	104.5	104.8	59.4	94.6	0.1		94.7
August.....	103.0	104.6	59.1	93.5	0.1		93.6
September.....	103.1	105.9	58.6	94.1	0.1		94.2
October.....	98.9	100.6	56.5	93.2	0.0		93.2
November.....	99.7	104.1	58.3	90.3	0.0		90.4
December.....	99.5	106.8	59.6	88.4	0.1		88.5
January, 1925.....	102.3	108.1	60.1	89.8	0.1		89.9
February.....	105.7	110.8	61.4	90.5	0.2		90.7
March.....	100.5	104.3	57.6	91.5	0.0		91.5
April.....	100.4	104.3	57.5	91.3	0.0		91.3
May.....	100.0	102.0	56.0	93.0	0.0		93.0
June.....	105.0	106.0	58.0	93.0	0.0		93.0
July.....	105.2	105.3	57.5	94.8	0.0		94.8
August.....	104.4	105.5	56.5	95.6	0.0		95.6
September.....	99.3	99.9	54.5	94.3	-0.1		94.2
October.....	98.8	98.8	53.8	94.9	-0.1		94.8
November.....	99.1	99.7	54.3	94.3	-0.1		94.2
December.....	97.5	100.4	54.6	92.1	-0.1		92.0
January, 1926.....	96.0	99.1	53.8	91.9	-0.1		91.8
February.....	96.7	99.8	54.2	91.9	-0.1		91.8
March.....	100.3	102.6	55.6	92.7	0.0		92.7
April.....	100.1	102.5	55.5	92.7	0.0		92.7
May.....	101.9	101.6	55.0	95.1	0.0		95.1
June.....	99.3	98.2	53.1	95.9	-0.1		95.8
July.....	97.3	94.6	50.8	97.7	-0.2		97.5
August.....	96.5	93.9	50.3	97.5	-0.2		97.3
September.....	100.5	98.6	52.5	96.7	0.9		97.6
October.....	104.6	101.9	54.0	97.4	1.5		98.9
November.....	101.3	100.9	53.2	95.3	1.0		96.3
December.....	105.4	100.3	55.8	94.1	2.2		96.3
January, 1927.....	100.7	102.1	53.4	93.6	0.8		94.4
February.....	107.6	109.2	56.8	93.6	2.4		95.9
March.....	105.0	105.6	54.7	94.3	1.2		95.5
April.....	110.2	111.2	57.3	94.0	2.4		96.4
May.....	110.4	110.4	56.7	94.8	1.9		96.7
June.....	115.3	113.1	57.8	96.8	2.3		99.1
July.....	115.3	113.0	57.0	96.7	2.1		98.8
August.....	116.4	114.6	58.2	96.3	2.2		98.5
September.....	118.0	115.6	58.5	96.9	2.3		99.2
October.....	118.0	116.4	58.8	96.1	2.3		98.4
November.....	115.1	115.2	58.0	94.8	1.7		96.5
December.....	119.7	121.5	61.0	93.4	3.0		96.4
January, 1928.....	116.8	118.9	59.5	93.2	2.2		95.4
February.....	118.2	120.6	60.2	93.0	2.4		95.4
March.....	122.2	123.9	61.7	93.5	3.0		96.5
April.....	124.9	124.9	62.0	94.8	3.0		97.8
May.....	124.9	123.0	60.8	96.3	2.3		98.6
June.....	122.8	120.4	59.4	96.8	1.4		98.2
July.....	124.8	121.4	59.6	97.5	1.4		98.9
August.....	125.6	122.0	59.6	97.6	1.3		98.9
September.....	126.3	122.4	59.6	97.8	1.1		98.9
October.....	127.1	124.4	60.1	96.9	1.2		98.1
November.....	127.1	125.7	60.5	95.8	1.3		97.1
December.....	126.7	128.7	61.6	93.4	1.7		95.1
January, 1929.....	125.3	126.8	60.4	93.7	1.0		94.7
February.....	125.1	127.3	60.3	93.2	0.8		94.0
March.....	130.2	131.4	61.9	94.0	1.4		95.4
April.....	126.8	127.3	59.7	94.5	0.2		94.7
May.....	132.2	130.6	61.0	96.9	0.7		97.7
June.....	137.2	134.1	62.2	97.1	1.2		98.3
July.....	137.9	134.0	62.6	97.0	1.2		98.2
August.....	140.3	137.9	63.9	96.5	1.7		98.2
September.....	141.4	139.3	64.5	96.3	1.0		98.2
October.....	141.0	143.1	66.2	94.0	2.6		96.6
November.....	137.3	143.6	66.4	90.7	2.5		93.2
December.....	134.2	143.6	66.4	88.6	2.4		91.0

TABLE 13. Index of membership employed and reporting in labour unions and percentage of membership reporting, percentage employed, corrections and final corrected percentage employed, June 30, 1920-December 31, 1935—Con.

Month	Index of Membership (base 1925)		P.C. of Member- ship Reporting	P.C. Employed	Correction for Size of Sample	Further Correction for Decrease in Member- ship	Final Corrected P.C. Employed
	Employed	Reporting					
January, 1930.....	134.3	142.8	85.9	89.2	-0.4		88.8
February.....	131.0	141.1	85.1	88.6	-1.0		87.5
March.....	134.3	142.8	85.8	89.2	-0.5		88.7
April.....	133.4	139.1	64.1	91.0	-1.7		89.3
May.....	126.6	133.0	61.0	89.7	-3.6		86.5
June.....	128.2	130.0	62.5	89.4	-2.9		87.7
July.....	129.1	134.9	62.3	90.8	-3.1		86.8
August.....	126.4	132.2	61.2	90.7	-3.9		89.0
September.....	132.5	138.8	64.5	90.6	-1.6		88.1
October.....	131.5	139.8	65.1	89.2	-1.1		85.1
November.....	126.2	138.8	64.8	86.2	-1.1		83.9
December.....	129.5	148.1	69.4	83.0	0.9		
January, 1931.....	125.0	141.8	66.7	84.0	-0.6		83.4
February.....	121.0	136.6	64.4	84.4	-1.1		84.1
March.....	125.2	140.5	66.5	84.5	-0.4		84.7
April.....	124.9	139.3	66.1	85.1	-0.4		82.9
May.....	117.9	133.5	63.6	83.8	-0.9		83.2
June.....	119.3	135.2	64.6	83.7	-0.5	0.0	83.3
July.....	119.1	134.8	64.8	83.8	-0.3	-0.2	83.5
August.....	118.4	133.4	64.7	84.2	-0.2	-0.5	80.8
September.....	112.0	130.7	64.0	81.0	-6.3	-0.8	80.6
October.....	111.8	129.8	63.9	81.7	-0.2	-0.9	80.0
November.....	109.3	127.4	63.2	81.4	-0.2	-1.2	77.5
December.....	105.8	127.1	63.5	78.9	0.0	-1.4	
January, 1932.....	104.2	126.7	63.7	78.0	0.2	-1.6	76.6
February.....	103.3	123.5	62.6	79.4	0.0	-1.8	77.6
March.....	102.6	122.3	62.5	79.6	0.1	-2.1	74.9
April.....	97.5	120.0	61.8	77.0	0.1	-2.2	75.4
May.....	97.2	118.3	61.4	77.9	0.1	-2.6	75.7
June.....	97.1	118.0	61.7	78.1	-0.3	-2.7	75.6
July.....	95.5	115.8	60.5	78.2	0.1	-2.6	75.5
August.....	91.4	110.2	57.0	78.8	-0.5	-2.4	76.7
September.....	91.7	109.3	57.1	79.9	-0.5	-2.3	74.6
October.....	90.2	109.7	57.2	78.0	-0.4	-2.0	71.7
November.....	88.3	108.6	56.6	77.2	-0.4		
December.....	82.2	104.7	54.5	74.5	-0.8		
January, 1933.....	83.0	105.7	55.0	74.5	-0.6	-1.8	72.1
February.....	80.6	101.2	52.6	76.7	-1.1	-1.7	73.3
March.....	80.5	102.0	53.0	74.9	0.0	-1.0	74.2
April.....	82.4	103.6	53.8	75.5	0.2	-1.4	74.5
May.....	80.2	99.8	51.8	76.2	-0.3	-1.3	76.7
June.....	83.4	101.1	52.4	78.2	-0.2	-1.3	77.4
July.....	84.7	102.0	53.0	78.8	-0.1	-2.8	78.7
August.....	86.1	102.0	53.0	80.1	-0.2	-1.2	78.6
September.....	85.2	100.7	52.4	80.2	-0.3	-1.1	78.0
October.....	84.8	100.2	52.2	80.2	-0.4	-1.1	77.3
November.....	83.2	99.1	51.7	79.6	-0.5		
December.....	82.4	98.9	51.7	79.0	-0.6		
January, 1934.....	83.8	100.9	52.8	78.8	-0.4	-1.1	77.3
February.....	84.2	99.8	52.3	80.0	-0.5	-1.1	78.8
March.....	83.2	98.1	51.4	80.5	-0.7	-1.0	80.4
April.....	86.6	101.6	53.3	80.9	-0.4	-0.2	81.3
May.....	90.9	105.8	56.6	81.5	0.0	-0.2	82.0
June.....	91.3	107.7	56.7	82.0	0.2	-0.2	81.8
July.....	93.1	105.4	55.3	82.1	-0.1	-0.2	83.3
August.....	94.4	107.2	56.3	83.5	0.0	-0.3	83.6
September.....	94.9	107.6	56.5	83.6	0.0	-0.4	81.9
October.....	96.5	109.3	57.4	83.8	0.2	-0.5	81.5
November.....	93.3	107.3	56.4	82.5	-0.1		
December.....	94.2	109.0	57.3	82.0	0.1		
January, 1935.....	94.1	109.0	57.4	81.9	0.0	-0.6	81.3
February.....	93.6	108.5	57.9	81.8	0.0	-0.7	82.5
March.....	94.8	107.9	56.9	83.3	-0.1	-0.8	83.3
April.....	95.8	109.5	57.8	83.0	0.0	-0.9	83.5
May.....	98.2	110.8	58.5	84.1	0.1	-1.0	84.1
June.....	97.2	109.1	57.6	84.6	-0.1	-0.5	86.5
July.....	99.2	110.8	57.8	85.8	-0.1	-0.3	86.7
August.....	101.0	112.3	57.9	87.0	-0.3	0.0	86.5
September.....	105.1	114.4	57.6	86.7	-0.3	0.2	85.3
October.....	104.7	114.3	56.9	86.7	-0.4	0.5	
November.....	104.5	114.3	56.9	85.4	-0.6		
December.....	103.5	114.0	56.5				

TABLE 14. Labour union figures on number of unions and members reporting and number and percentage unemployed, by industries and months, Canada, June 30, 1920-December 31, 1935

No.	Month	All Industries				Manufacturing	
		No. Reporting		Unemployed		No. Reporting	
		Unions	Members	No.	P.C.	Unions	Members
1	June, 1920.....	1,565	194,023	4,812	2.5	392	51,259
2	July.....	1,464	185,327	4,894	2.6	369	50,373
3	August.....	1,464	187,432	5,925	3.2	378	53,730
4	September.....	1,468	189,233	6,154	3.3	362	51,525
5	October.....	1,509	215,212	12,898	6.0	384	50,034
6	November.....	1,498	216,285	21,659	10.0	389	55,273
7	December.....	1,573	208,320	27,953	13.4	378	49,655
8	January, 1921.....	1,538	197,928	25,871	13.1	357	50,076
9	February.....	1,513	198,276	31,958	16.1	349	49,647
10	March.....	1,563	206,801	34,106	16.5	374	51,997
11	April.....	1,661	204,357	33,264	16.3	397	51,351
12	May.....	1,673	201,496	31,153	15.5	407	51,529
13	June.....	1,511	181,522	22,868	13.2	367	42,698
14	July.....	1,542	182,624	16,610	9.1	356	44,683
15	August.....	1,617	188,963	16,450	8.7	369	46,413
16	September.....	1,615	183,373	15,530	8.5	365	44,874
17	October.....	1,552	174,336	12,940	7.4	355	42,015
18	November.....	1,509	164,107	18,151	11.1	323	38,214
19	December.....	1,520	161,085	24,311	15.1	324	38,165
20	January, 1922.....	1,525	159,290	22,030	13.9	428	47,537
21	February.....	1,528	163,033	17,209	10.6	418	45,100
22	March.....	1,480	157,639	15,173	9.6	401	45,517
23	April.....	1,412	141,505	14,708	10.4	393	38,791
24	May.....	1,423	180,505	13,138	8.7	385	46,219
25	June.....	1,437	151,564	8,101	5.3	409	47,249
26	July.....	1,541	162,632	6,699	4.1	442	52,650
27	August.....	1,474	148,408	5,399	3.6	405	45,029
28	September.....	1,477	161,182	4,568	2.8	428	54,096
29	October.....	1,468	153,642	5,998	3.9	425	51,011
30	November.....	1,427	147,243	9,052	6.2	396	49,138
31	December.....	1,469	155,000	9,982	6.4	405	48,652
32	January, 1923.....	1,372	140,585	10,925	7.8	372	44,141
33	February.....	1,435	149,969	9,664	6.4	399	46,578
34	March.....	1,404	149,000	10,155	6.8	390	44,507
35	April.....	1,368	149,536	6,902	4.6	365	43,803
36	May.....	1,426	156,939	7,087	4.5	386	40,361
37	June.....	1,449	155,056	5,209	3.4	399	48,909
38	July.....	1,481	154,522	4,445	2.9	415	48,947
39	August.....	1,440	152,505	3,308	2.2	396	45,982
40	September.....	1,475	151,461	3,018	2.0	407	45,784
41	October.....	1,461	156,849	7,508	4.8	405	47,065
42	November.....	1,456	153,369	9,535	6.2	407	46,965
43	December.....	1,532	162,313	11,767	7.2	429	49,241
44	January, 1924.....	1,522	156,272	11,768	7.5	425	47,298
45	February.....	1,492	155,546	12,112	7.8	413	46,584
46	March.....	1,459	150,129	10,051	6.7	409	46,772
47	April.....	1,452	154,160	7,882	5.1	404	47,215
48	May.....	1,458	158,023	11,571	7.3	417	51,089
49	June.....	1,501	168,325	9,230	5.5	414	49,041
50	July.....	1,453	155,429	8,327	5.4	407	46,755
51	August.....	1,496	155,117	10,180	6.6	411	45,267
52	September.....	1,527	154,181	9,156	5.9	431	45,303
53	October.....	1,487	149,292	10,162	6.8	413	44,035
54	November.....	1,501	154,375	14,939	9.7	421	45,400
55	December.....	1,529	158,367	18,373	11.6	415	44,949
56	January, 1925.....	1,606	160,365	16,425	10.2	452	46,503
57	February.....	1,642	164,367	15,610	9.5	459	47,716
58	March.....	1,550	154,558	13,150	8.5	425	42,246
59	April.....	1,500	154,738	13,436	8.7	417	43,883
60	May.....	1,483	151,284	10,568	7.0	411	44,018
61	June.....	1,543	157,268	9,575	6.1	420	45,047
62	July.....	1,531	156,133	8,054	5.2	415	45,303
63	August.....	1,507	153,550	6,689	4.4	404	43,840
64	September.....	1,617	148,161	8,374	5.7	395	42,886
65	October.....	1,503	146,559	7,486	5.1	407	43,273
66	November.....	1,532	147,853	8,440	5.7	416	43,145
67	December.....	1,558	148,922	11,710	7.9	409	43,539

Note.—0.0 indicates less than 0.1 p.c. unemployment.

TABLE 14. Labour union figures on number of unions and members reporting and number and percentage unemployed, by industries and months, Canada,
June 30, 1929-December 31, 1935

Manufacturing		Mining and Quarrying				Building and Construction				Σ
Unemployed		No. Reporting		Unemployed		No. Reporting		Unemployed		
No.	P.C.	Unions	Members	No.	P.C.	Unions	Members	No.	P.C.	
1,113	2.2	41	10,915	42	0.4	275	31,959	1,359	4.3	1
1,440	2.9	34	10,081	95	0.9	204	32,749	1,307	4.0	2
2,796	5.2	37	10,497	25	0.2	253	28,724	858	3.0	3
4,532	8.8	34	9,529	5	0.1	252	29,277	599	2.0	4
6,669	11.9	35	11,184	12	0.1	291	34,143	1,263	3.7	5
8,602	15.0	35	11,164	65	0.6	261	30,818	3,772	12.4	6
10,522	21.4	36	10,984	137	1.3	286	32,875	8,524	26.5	7
7,346	14.7	38	12,597	192	1.5	280	30,440	9,359	30.8	8
5,527	11.1	35	10,105	910	9.0	274	29,265	9,182	31.4	9
7,485	14.4	39	11,453	1,381	12.1	274	31,866	8,180	25.7	10
10,924	21.3	36	11,134	2,435	21.9	289	29,447	5,899	20.0	11
12,303	23.9	41	11,144	1,465	13.2	289	28,789	4,554	15.8	12
9,302	19.8	39	11,354	1,911	16.8	237	28,006	3,495	13.4	13
4,857	10.9	37	11,703	1,342	11.5	245	23,284	4,353	18.7	14
6,016	13.0	35	10,607	853	8.0	268	29,465	5,349	18.2	15
6,203	13.8	41	13,183	1,217	9.2	268	28,196	3,069	11.7	16
5,369	12.8	37	11,512	419	3.8	250	23,425	2,968	12.7	17
8,363	21.9	27	9,661	661	6.8	241	21,970	3,903	17.8	18
10,128	26.5	32	9,558	254	2.7	244	22,782	5,898	25.9	19
7,517	15.8	31	8,940	996	11.1	225	19,300	6,322	32.8	20
3,396	7.5	33	10,695	840	7.9	219	22,303	6,503	29.2	21
3,701	8.1	25	7,534	436	5.8	212	18,903	4,422	23.4	22
4,173	10.8	25	7,713	1,821	23.6	185	16,561	2,559	15.5	23
5,552	15.0	22	7,458	817	11.0	195	17,369	1,449	8.3	24
3,087	6.5	23	7,943	741	9.3	184	15,399	797	5.2	25
3,250	6.2	28	9,168	100	1.1	202	18,657	754	4.0	26
2,611	5.8	32	9,438	435	4.6	190	15,090	567	3.8	27
2,468	4.5	31	11,024	71	0.6	185	10,822	450	2.7	28
2,846	5.5	28	8,708	58	0.7	181	15,630	958	6.0	29
5,218	10.5	25	9,239	150	1.7	179	13,392	1,390	10.4	30
4,131	8.5	27	11,806	173	1.5	189	14,243	2,643	18.6	31
2,822	6.4	26	9,097	496	5.5	190	13,341	3,277	24.5	32
2,850	6.1	28	9,537	297	3.1	184	13,882	3,342	24.1	33
2,630	5.7	29	11,223	625	5.5	170	12,608	2,598	20.6	34
1,601	3.7	29	11,844	1,013	8.6	173	14,932	1,157	7.7	35
4,298	9.2	34	11,774	632	5.4	181	18,320	782	4.3	36
2,661	5.4	30	9,986	751	7.5	185	15,048	459	3.1	37
2,117	4.3	29	8,967	674	7.5	182	15,628	623	4.0	38
1,316	2.9	36	11,196	268	2.4	174	16,199	895	5.5	39
1,332	2.9	34	12,052	122	1.0	177	15,130	651	4.3	40
4,526	9.9	32	11,543	462	4.0	173	18,273	1,182	6.5	41
4,901	10.4	27	10,564	511	4.8	167	14,759	1,924	13.0	42
3,835	7.8	31	11,940	964	8.1	176	18,335	3,985	21.7	43
3,153	5.7	31	10,372	911	8.8	179	17,938	4,719	26.3	44
3,285	7.0	28	10,147	634	6.2	182	18,304	5,262	28.7	45
2,054	4.4	29	9,577	382	3.9	167	15,152	4,304	28.4	46
2,136	4.5	29	9,175	123	1.3	172	17,992	3,315	19.1	47
6,010	12.9	31	10,767	142	1.3	172	17,967	2,776	15.5	48
5,068	10.3	37	11,254	743	6.6	178	16,447	1,736	10.6	49
3,539	7.6	31	9,230	153	1.7	158	18,385	2,231	12.1	50
4,573	10.1	33	9,825	871	8.9	168	17,711	2,083	11.8	51
4,141	9.1	29	9,065	559	7.2	169	17,686	2,087	11.9	52
4,831	11.0	27	7,740	1,277	10.6	173	15,668	2,177	13.1	53
7,929	17.5	29	9,604	1,509	16.8	173	17,924	2,541	14.2	54
9,375	20.9	32	11,845	490	4.1	180	18,058	4,508	24.9	55
0,044	14.3	39	10,894	1,089	10.0	175	17,703	4,868	27.5	56
4,605	9.7	39	12,274	1,296	10.6	185	18,402	4,801	26.1	57
4,302	10.2	35	11,492	1,070	9.3	167	17,386	3,911	22.6	58
5,395	12.3	32	10,048	1,489	14.0	169	16,875	3,101	18.4	59
5,307	12.1	31	10,484	1,445	13.8	151	16,475	1,101	7.0	60
4,609	10.0	33	11,705	1,279	10.9	159	15,697	1,403	8.9	61
3,833	8.5	30	10,789	1,014	9.4	170	17,206	1,257	7.4	62
8,609	8.0	28	9,415	542	5.8	163	17,449	1,070	6.1	63
4,732	11.0	28	7,833	488	6.4	151	16,852	1,664	10.6	64
3,901	9.0	28	7,650	408	5.3	150	11,621	1,319	11.4	65
3,978	9.2	27	8,211	375	4.6	170	13,677	1,701	12.4	66
5,647	13.0	28	8,532	187	2.2	169	13,065	2,743	21.0	67

**TABLE 14. Labour union figures on number of unions and members reporting and number and percentage unemployed, by industries and months, Canada,
June 30, 1920-December 31, 1935—Con.**

No.	Month	Transportation				Communication	
		No. Reporting		Unemployed		No. Reporting	
		Unions	Members	No.	P.C.	Unions	Members
1	June, 1920.....	630	78,835	1,966	2.5	10	7,628
2	July.....	583	72,462	1,842	2.5	11	7,894
3	August.....	596	73,637	2,054	2.8	11	7,776
4	September.....	606	77,928	772	1.0	11	8,351
5	October.....	608	77,638	711	0.9	12	9,138
6	November.....	595	81,177	2,128	2.6	12	8,532
7	December.....	625	81,181	6,570	8.1	27	8,195
8	January, 1921.....	613	75,650	0.499	8.6	24	5,916
9	February.....	594	70,963	7,310	10.3	37	7,342
10	March.....	616	70,782	8,358	11.8	42	8,682
11	April.....	615	69,739	8,107	11.6	47	8,185
12	May.....	618	70,393	7,056	10.0	65	9,016
13	June.....	580	66,787	4,752	7.1	72	8,972
14	July.....	627	70,550	3,166	4.5	41	8,321
15	August.....	653	71,554	2,402	3.4	59	8,710
16	September.....	647	71,018	3,584	5.1	64	8,405
17	October.....	628	67,140	2,027	3.0	52	8,571
18	November.....	572	53,361	1,594	3.0	118	19,322
19	December.....	646	62,318	4,715	7.6	59	8,764
20	January, 1922.....	564	58,203	4,601	7.9	56	8,245
21	February.....	577	59,698	4,092	6.9	65	8,525
22	March.....	561	59,515	4,310	7.2	64	8,102
23	April.....	515	50,071	3,228	6.5	66	8,380
24	May.....	543	55,903	3,004	5.4	62	8,294
25	June.....	554	52,751	2,241	4.3	63	8,531
26	July.....	574	53,920	1,570	2.9	64	8,397
27	August.....	558	51,841	1,095	2.1	64	8,412
28	September.....	546	51,730	740	1.4	64	8,575
29	October.....	550	51,385	854	1.9	65	8,691
30	November.....	545	48,888	868	1.8	64	8,301
31	December.....	572	54,233	1,327	2.4	64	8,270
32	January, 1923.....	516	48,924	2,428	5.0	62	8,040
33	February.....	541	54,800	2,050	4.9	65	8,353
34	March.....	546	54,879	2,459	4.5	64	8,195
35	April.....	531	53,034	2,269	4.3	66	8,297
36	May.....	558	53,777	1,095	2.0	65	8,161
37	June.....	558	54,734	1,139	2.1	65	8,280
38	July.....	562	55,128	539	1.5	65	8,301
39	August.....	560	53,603	566	1.1	62	8,185
40	September.....	574	54,283	561	1.0	64	8,307
41	October.....	558	53,510	939	1.8	64	8,178
42	November.....	560	55,103	1,813	3.3	65	8,231
43	December.....	599	56,973	2,286	4.0	64	8,205
44	January, 1924.....	592	56,754	2,454	4.3	66	8,611
45	February.....	568	54,123	1,873	3.5	67	8,640
46	March.....	558	53,240	2,921	5.5	66	8,302
47	April.....	561	54,113	1,957	3.6	65	8,276
48	May.....	549	53,617	1,664	3.1	65	8,482
49	June.....	589	55,566	1,431	2.6	66	8,850
50	July.....	583	54,589	2,120	3.9	67	8,888
51	August.....	584	55,814	2,122	3.8	69	9,291
52	September.....	598	55,698	1,767	3.2	67	9,169
53	October.....	591	55,418	1,621	2.9	69	9,177
54	November.....	587	54,914	2,220	4.0	66	9,141
55	December.....	618	57,767	3,185	5.5	66	9,207
56	January, 1925.....	641	58,643	2,995	5.1	67	9,395
57	February.....	659	60,118	3,664	5.9	64	8,829
58	March.....	628	57,168	3,106	5.4	66	9,001
59	April.....	591	56,104	2,641	4.7	68	9,337
60	May.....	583	54,923	2,116	3.9	68	8,782
61	June.....	618	56,865	1,845	3.2	70	9,003
62	July.....	615	56,854	1,489	2.6	68	8,627
63	August.....	609	57,286	1,303	2.3	67	8,618
64	September.....	621	56,720	1,036	1.8	66	8,466
65	October.....	621	58,008	1,401	2.4	65	8,413
66	November.....	624	56,989	1,793	3.1	67	8,766
67	December.....	654	58,384	2,425	4.2	66	8,699

TABLE 14. Labour union figures on number of unions and members reporting and number and percentage unemployed, by industries and months, Canada,
June 30, 1930-December 31, 1935—Con.

Communication		Lumbering and Logging				Retail Trade				S
Unemployed		No. Reporting		Unemployed		No. Reporting		Unemployed		
No.	P.C.	Unions	Members	No.	P.C.	Unions	Members	No.	P.C.	
7	0-1	-	-	-	-	6	623	4	0-6	1
6	0-1	-	-	-	-	7	1,194	3	0-3	2
10	0-1	-	-	-	-	5	950	1	0-1	3
12	0-2	4	14,375	3,650	25-4	4	894	-	-	4
14	0-2	5	14,790	6,300	42-6	3	403	2	0-5	5
205	2-5	4	3,944	500	12-7	6	1,055	-	0-6	6
						4	491	2	0-4	7
9	0-2	3	2,043	200	9-8	3	768	1	0-1	8
238	3-2	3	9,514	8,245	65-6	4	481	2	0-4	9
253	2-9	7	10,155	5,169	60-8	4	457	-	-	10
462	5-6	3	8,015	4,016	46-6	4	529	-	-	11
435	4-8	3	9,063	3,840	42-2	5	970	-	-	12
31	0-4	2	6,562	3,500	53-3	4	530	5	1-5	13
12	0-1	4	5,229	1,865	35-7	8	1,203	9	0-8	14
19	0-2	2	2,278	515	22-6	8	1,152	9	0-7	15
13	0-2	2	2,278	520	22-8	11	1,721	8	0-5	16
31	0-4	1	2,500	800	32-0	9	1,970	1	0-1	17
902	4-7	3	2,776	515	18-6	12	1,314	10	0-8	18
86	1-0	2	2,254	1,015	45-0	6	455	-	-	19
18	0-2	1	290	17	6-5	7	743	-	-	20
56	0-7	1	260	24	9-2	6	565	1	0-2	21
39	0-5	2	712	50	7-0	6	555	1	0-2	22
39	0-5	3	2,677	1,035	38-7	6	670	7	1-0	23
38	0-5	1	440	12	2-7	7	780	-	-	24
37	0-4	3	2,685	25	0-9	7	768	4	0-5	25
37	0-4	2	670	18	2-7	10	1,073	-	-	26
38	0-5	-	-	-	-	9	855	13	1-5	27
37	0-4	-	-	-	-	8	894	9	0-2	28
37	0-4	-	-	-	-	8	734	3	0-4	29
38	0-5	2	680	21	3-1	6	601	1	0-2	30
41	0-5	2	700	30	4-3	8	955	20	3-0	31
50	0-6	1	520	20	3-8	7	747	25	3-3	32
45	0-5	1	550	25	4-5	5	565	11	1-9	33
41	0-5	-	-	-	-	7	764	11	1-4	34
38	0-5	1	560	35	6-3	6	698	10	1-4	35
32	0-4	1	580	30	5-2	7	740	6	0-8	36
32	0-4	1	591	29	4-9	7	727	5	0-7	37
32	0-4	-	-	-	-	6	668	3	0-4	38
32	0-4	1	250	8	3-2	7	651	5	0-8	39
32	0-4	1	230	-	-	6	612	5	0-8	40
36	0-4	1	240	-	-	6	604	3	0-3	41
47	0-6	-	-	-	-	6	492	3	0-6	42
46	0-5	1	210	-	-	6	515	8	1-6	43
21	0-2	-	-	-	-	6	524	5	1-0	44
5	0-1	1	210	-	-	6	520	17	3-3	45
8	0-1	1	290	-	-	6	530	25	4-7	46
4	0-0	1	230	-	-	6	564	9	1-6	47
4	0-0	1	200	-	-	6	546	5	0-9	48
11	0-1	1	225	-	-	6	554	12	2-2	49
11	0-1	2	240	15	6-3	6	546	2	0-4	50
11	0-1	2	475	200	42-1	6	548	9	1-6	51
5	0-1	2	470	163	34-7	6	546	6	1-1	52
11	0-1	2	516	-	-	7	660	3	0-5	53
38	0-4	2	523	250	47-8	7	633	6	0-9	54
102	1-1	2	503	290	57-7	7	636	13	2-0	55
259	2-8	1	180	-	-	7	685	4	0-6	56
214	2-4	2	562	300	53-4	10	817	2	0-2	57
117	1-3	2	567	237	41-8	7	664	6	0-9	58
148	1-6	2	486	306	63-0	7	680	3	0-4	59
187	2-1	2	577	100	17-3	5	529	10	1-9	60
5	0-1	2	400	100	25-0	6	572	11	1-9	61
2	0-0	2	508	200	39-4	7	775	9	1-2	62
2	0-0	2	408	-	-	7	779	15	1-9	63
6	0-1	2	440	200	45-5	7	790	4	0-5	64
1	0-0	1	200	-	-	6	707	-	-	65
22	0-3	2	506	200	40-0	6	539	-	-	66
19	0-2	1	250	200	80-0	6	-	-	-	67

TABLE 14. Labour union figures on number of unions and members reporting and number and percentage unemployed, by industries and months, Canada, June 30, 1920-December 31, 1935—Con.

No.	Month	Public Employment				Fishing	
		No. Reporting		Unemployed		No. Reporting	
		Unions	Members	No.	P.C.	Unions	Members
1	June, 1920.....	75	5,957	-	-	0	2,087
2	July.....	72	5,952	2	0-0	0	2,102
3	August.....	67	4,203	5	0-1	0	2,016
4	September.....	73	5,766	1	0-0	5	1,966
5	October.....	75	6,087	1	0-0	5	2,141
6	November.....	72	6,027	213	3-1	5	2,231
7	December.....	78	7,119	90	1-3	4	1,847
8	January, 1921.....	76	5,917	297	5-0	4	1,886
9	February.....	78	6,417	230	3-6	3	1,745
10	March.....	74	6,991	354	5-1	4	1,903
11	April.....	113	10,343	392	3-8	3	1,771
12	May.....	108	10,053	512	5-1	4	1,891
13	June.....	105	9,397	-	-	3	1,782
14	July.....	103	7,749	71	0-9	3	2,078
15	August.....	105	9,068	282	3-1	4	2,371
16	September.....	105	7,737	82	1-1	4	2,361
17	October.....	102	8,357	308	3-7	3	2,200
18	November.....	104	9,973	511	5-1	3	2,190
19	December.....	100	9,155	209	2-3	3	2,116
20	January, 1922.....	109	9,245	553	6-0	3	2,102
21	February.....	112	9,224	505	5-6	3	2,101
22	March.....	116	10,388	580	5-6	3	2,087
23	April.....	118	10,272	312	3-0	3	1,989
24	May.....	114	9,614	34	0-4	3	2,036
25	June.....	110	9,999	255	2-6	4	2,486
26	July.....	116	10,571	206	2-0	4	2,498
27	August.....	112	10,623	50	0-5	4	2,572
28	September.....	114	10,270	175	1-7	4	2,678
29	October.....	114	10,083	224	2-2	2	1,852
30	November.....	113	10,313	140	1-4	4	2,469
31	December.....	108	10,188	273	2-7	3	1,702
32	January, 1923.....	106	9,275	238	2-6	4	2,229
33	February.....	115	10,646	124	1-2	3	877
34	March.....	111	10,616	392	3-7	3	2,229
35	April.....	108	10,276	147	1-4	4	2,272
36	May.....	111	10,444	37	0-4	3	2,239
37	June.....	112	10,281	12	0-1	3	2,287
38	July.....	125	11,021	44	0-4	3	1,435
39	August.....	118	10,848	110	1-0	3	1,735
40	September.....	123	10,809	214	2-0	1	85
41	October.....	124	11,498	140	1-2	3	1,835
42	November.....	120	11,259	124	1-1	4	1,935
43	December.....	120	10,979	139	1-3	2	1,590
44	January, 1924.....	129	10,036	81	0-8	2	477
45	February.....	132	11,236	189	1-7	3	1,573
46	March.....	130	9,576	143	1-5	3	1,678
47	April.....	129	11,796	127	1-2	3	1,678
48	May.....	123	10,527	103	1-0	2	850
49	June.....	124	11,628	9	0-1	2	850
50	July.....	131	12,024	2	0-0	2	675
51	August.....	131	11,238	5	0-0	3	878
52	September.....	120	11,060	49	0-4	3	878
53	October.....	122	10,674	52	0-5	3	828
54	November.....	123	11,165	106	0-9	2	678
55	December.....	117	10,608	107	1-0	2	678
56	January, 1925.....	129	11,364	132	1-2	3	898
57	February.....	128	10,393	131	1-3	3	775
58	March.....	130	11,182	89	0-8	3	725
59	April.....	126	10,892	9	0-1	3	1,628
60	May.....	123	10,600	9	0-1	3	725
61	June.....	125	11,181	200	1-8	3	1,330
62	July.....	124	10,375	16	0-2	3	1,530
63	August.....	128	10,559	63	0-6	3	725
64	September.....	132	10,317	3	0-0	2	175
65	October.....	127	11,133	60	0-5	3	745
66	November.....	125	11,059	99	0-9	3	725
67	December.....	120	11,121	153	1-7	1	550

TABLE 14. Labour union figures on number of unions and members reporting and number and percentage unemployed, by industries and months, Canada, June 30, 1920-December 31, 1935—Con.

Fishing		Miscellaneous										Σ	
		Total				Hotels and Restaurants							
		No. Reporting		Unemployed		No. Reporting		Unemployed		No. Reporting			Unemployed
No.	P.C.	Unions	Members	No.	P.C.	Unions	Members	No.	P.C.	Unions	Members	No.	P.C.
5	0.2	134	12,073	311	2.6	10	1,407	38	2.5	1			
-	-	122	10,097	205	2.0	8	1,301	71	6.5	2			
4	0.2	116	13,321	212	1.6	9	1,434	65	4.5	3			
20	1.0	125	11,306	227	2.0	6	1,142	47	4.1	4			
30	1.4	128	12,276	561	4.0	8	1,259	32	8.5	5			
146	6.5	126	12,975	434	3.3	10	1,717	153	8.9	6			
205	11.1	131	12,329	998	8.1	8	868	66	6.5	7			
1,330	70.5	140	12,605	631	5.0	11	1,652	199	11.8	8			
1,205	69.1	135	11,797	1,109	9.4	10	1,619	103	10.1	9			
611	32.1	132	12,035	1,314	10.4	9	1,663	193	11.6	10			
465	25.3	154	13,243	553	4.2	10	1,668	121	7.7	11			
470	24.9	127	8,591	518	6.0	10	1,657	170	10.1	12			
450	25.3	112	7,464	417	6.6	5	1,019	74	7.3	13			
373	18.0	118	7,824	662	7.2	10	1,408	138	9.8	14			
343	14.5	119	7,345	663	9.0	9	1,008	137	13.6	15			
470	20.2	110	5,600	358	6.4	7	777	84	10.8	16			
564	25.6	115	6,648	453	6.8	7	814	154	18.9	17			
1,350	61.6	104	5,326	342	6.4	7	492	52	10.6	18			
1,494	70.6	99	5,508	512	9.3	7	431	105	24.4	19			
1,539	73.1	101	4,705	499	10.6	5	461	75	16.3	20			
1,333	63.5	94	4,565	459	10.1	7	622	99	15.9	21			
1,215	68.2	90	4,326	419	9.7	6	560	103	18.4	22			
1,110	55.8	90	4,381	414	9.5	6	528	95	18.0	23			
765	37.7	91	4,392	364	8.3	8	681	74	10.4	24			
663	26.7	50	3,753	250	6.7	5	580	38	10.6	25			
438	17.5	99	5,022	328	6.5	8	756	43	6.7	26			
316	12.3	97	4,548	273	6.0	8	672	52	7.7	27			
432	16.1	95	4,523	193	4.3	9	791	61	7.7	28			
698	37.7	93	4,668	220	4.7	7	709	76	10.7	29			
958	38.8	93	4,225	258	6.1	8	681	112	16.4	30			
1,103	64.8	91	4,244	232	5.5	7	584	62	9.1	31			
1,237	55.5	88	4,271	332	7.8	8	544	129	18.6	32			
12	1.4	94	4,375	308	7.0	7	585	88	14.7	33			
1,211	64.1	84	3,969	290	7.3	6	470	63	13.4	34			
460	20.2	85	3,820	172	4.5	3	274	20	7.3	35			
-	-	87	4,043	175	4.3	5	373	35	9.4	36			
-	-	88	4,183	211	5.1	5	421	60	11.9	37			
-	-	94	4,427	113	2.6	5	564	30	5.3	38			
-	-	89	4,056	108	2.7	4	348	24	7.5	39			
-	-	88	4,199	101	2.4	5	422	27	6.4	40			
75	4.1	85	4,067	145	3.5	0	472	43	9.1	41			
80	3.1	84	4,058	152	3.7	0	485	47	9.7	42			
300	19.4	94	4,368	205	4.7	0	468	37	7.9	43			
200	41.9	92	4,262	224	6.3	0	463	36	7.8	44			
600	38.0	92	4,204	267	6.4	8	635	43	8.1	45			
-	-	90	3,972	254	6.4	7	539	35	6.9	46			
-	-	82	3,721	201	5.4	6	433	21	4.4	47			
-	-	89	3,978	267	6.7	0	469	32	6.8	48			
-	-	84	3,910	250	6.4	4	405	15	3.7	49			
-	-	85	4,067	257	6.3	4	362	25	6.9	50			
-	-	89	4,070	286	7.0	4	365	25	6.8	51			
-	-	92	4,343	282	6.5	5	473	57	12.1	52			
-	-	80	3,575	190	6.3	3	194	-	-	53			
-	-	91	4,392	339	7.7	4	488	25	6.1	54			
-	-	93	4,090	302	7.4	4	344	20	6.8	55			
100	11.1	94	4,150	334	8.0	6	403	45	11.2	56			
60	6.6	96	4,481	650	14.6	4	491	89	16.3	57			
60	8.3	89	4,127	281	6.8	6	654	60	9.0	58			
50	3.1	89	4,205	295	7.0	0	622	83	13.3	59			
-	-	90	4,171	223	5.6	6	622	75	12.0	60			
-	-	101	4,565	230	5.0	7	772	43	5.6	61			
-	-	97	4,366	224	6.1	5	638	29	3.1	62			
-	-	90	4,473	185	4.1	6	746	33	4.4	63			
-	-	100	4,882	241	4.9	7	808	34	4.2	64			
100	13.4	91	4,810	290	6.2	7	961	95	9.9	65			
-	-	93	4,492	286	6.4	7	522	45	5.6	66			
-	-	92	4,144	302	7.3	5	311	5	1.6	67			

TABLE 14. Labour union figures on number of unions and members reporting and number and percentage unemployed, by industries and months, Canada, June 30, 1920-December 31, 1935—Con.

No.	Month	Miscellaneous					
		Barbers				Musicians and Theatre Employees	
		No. Reporting		Unemployed		No. Reporting	
		Unions	Members	No.	P.C.	Unions	Members
1	June, 1920.....	30	1,407	0	0-4	40	4,775
2	July.....	31	1,396	2	0-1	37	3,488
3	August.....	31	1,374	2	0-2	34	2,888
4	September.....	32	1,065	14	0-8	40	4,066
5	October.....	33	1,840	32	1-7	36	3,749
6	November.....	27	1,323	36	2-7	39	5,785
7	December.....	33	1,575	48	3-1	39	4,532
8	January, 1921.....	34	1,578	63	4-0	46	5,681
9	February.....	34	1,590	42	2-6	45	4,494
10	March.....	32	1,550	38	2-5	42	4,759
11	April.....	32	1,507	44	2-8	48	5,359
12	May.....	34	1,823	48	3-0	24 ¹	801
13	June.....	33	1,586	29	1-8	22	730
14	July.....	33	1,612	41	2-5	23	728
15	August.....	35	1,688	125	7-4	21	706
16	September.....	35	1,640	90	5-5	19	645
17	October.....	35	1,641	87	5-3	21	712
18	November.....	32	1,519	86	5-7	21	702
19	December.....	28	1,412	90	6-4	20	668
20	January, 1922.....	35	1,580	116	7-3	23	735
21	February.....	31	1,440	105	7-3	26	796
22	March.....	27	1,227	55	4-5	22	729
23	April.....	30	1,422	88	6-2	23	730
24	May.....	25	1,157	24	2-1	23	732
25	June.....	24	1,090	6	0-5	22	671
26	July.....	32	1,470	85	5-8	24	836
27	August.....	30	1,266	19	1-5	23	698
28	September.....	30	1,268	24	1-9	24	690
29	October.....	29	1,204	31	2-6	22	693
30	November.....	30	1,352	29	2-1	21	612
31	December.....	27	1,114	21	1-9	23	692
32	January, 1923.....	28	1,230	52	4-2	19	610
33	February.....	31	1,200	49	3-8	24	682
34	March.....	27	1,274	48	3-8	22	668
35	April.....	29	1,362	48	3-5	22	638
36	May.....	29	1,318	21	1-6	24	699
37	June.....	30	1,337	11	0-8	22	638
38	July.....	31	1,355	7	0-5	25	658
39	August.....	31	1,293	6	0-4	24	632
40	September.....	31	1,308	17	1-2	25	668
41	October.....	29	1,185	20	1-7	24	654
42	November.....	27	1,194	23	1-9	23	621
43	December.....	33	1,294	19	1-5	25	679
44	January, 1924.....	30	1,207	29	2-4	26	680
45	February.....	30	1,264	50	4-0	23	566
46	March.....	31	1,186	27	2-3	22	573
47	April.....	30	1,119	20	1-8	22	596
48	May.....	31	1,121	7	0-6	23	616
49	June.....	29	1,117	2	0-2	24	639
50	July.....	31	1,239	6	0-5	20	518
51	August.....	30	1,224	10	0-8	23	591
52	September.....	31	1,224	32	2-6	22	575
53	October.....	32	1,144	29	2-5	20	520
54	November.....	32	1,207	35	2-8	23	587
55	December.....	32	1,215	27	2-2	23	591
56	January, 1925.....	32	1,230	34	2-8	27	679
57	February.....	33	1,284	31	2-5	26	706
58	March.....	31	1,170	25	2-1	25	548
59	April.....	31	1,057	11	1-0	22	539
60	May.....	29	953	4	0-4	25	600
61	June.....	28	1,052	6	0-6	24	605
62	July.....	28	971	3	0-3	24	564
63	August.....	28	996	5	0-5	23	563
64	September.....	30	1,209	19	1-6	20	515
65	October.....	30	1,200	30	2-5	19	489
66	November.....	27	927	9	1-0	23	557
67	December.....	29	1,169	17	1-5	21	505

¹ Theatre employees only from this point on.

TABLE 14. Labour union figures on number of unions and members reporting and number and percentage unemployed, by industries and months, Canada, June 30, 1920-December 31, 1935—Con.

Miscellaneous											No.
Musicians and Theatre Employees		Stationary Engineers and Firemen				Others					
Unemployed		No. Reporting		Unemployed		No. Reporting		Unemployed			
No.	P.C.	Unions	Members	No.	P.C.	Unions	Members	No.	P.C.		
140	2-0	28	2,039	115	5-6	29	2,445	15	0-0	1	
116	3-3	24	1,305	15	1-2	22	2,607	1	0-0	2	
94	3-3	23	1,089	23	1-4	20	5,936	28	0-5	3	
72	1-6	25	1,502	29	1-9	22	2,391	65	2-7	4	
92	2-5	26	1,575	84	5-3	25	3,853	271	7-0	5	
104	1-8	28	1,464	54	3-7	22	2,678	87	3-3	6	
144	3-2	29	1,456	67	4-6	22	3,898	683	17-5	7	
110	2-0	26	1,432	92	6-4	23	2,252	165	7-3	8	
74	1-7	25	1,323	48	3-6	21	2,771	782	28-2	9	
140	2-9	30	1,684	92	5-5	19	2,999	851	28-4	10	
129	2-2	44	2,360	139	5-9	20	1,809	120	6-6	11	
113	14-1	41	2,110	150	7-1	18	2,370	37	1-6	12	
124	17-0	37	1,783	111	6-2	16	2,346	79	3-4	13	
104	22-5	36	1,681	127	7-6	16	2,400	92	3-8	14	
69	9-8	34	1,675	100	6-0	20	2,268	232	10-2	15	
70	7-8	34	1,677	105	6-3	15	861	29	3-4	16	
67	8-0	33	1,575	85	5-4	19	1,934	70	3-7	17	
60	8-0	31	1,553	107	6-9	13	1,050	37	3-5	18	
63	7-9	31	1,503	189	12-1	13	1,434	75	5-2	19	
54	7-3	33	1,593	239	15-0	5	336	15	4-5	20	
87	10-9	25	1,399	141	10-1	5	308	27	8-8	21	
77	10-5	29	1,553	155	10-0	6	257	29	11-3	22	
64	8-8	27	1,439	160	10-8	4	215	7	3-3	23	
133	13-9	29	1,558	111	7-1	6	264	17	6-4	24	
149	22-2	23	1,448	29	2-0	6	184	29	15-8	25	
100	19-1	29	1,619	40	2-5	6	341	-	-	26	
114	16-3	29	1,636	88	5-4	7	276	-	-	27	
70	10-0	28	1,579	38	2-4	4	186	-	-	28	
56	8-1	29	1,718	49	2-9	6	344	8	2-3	29	
45	7-4	26	1,290	70	5-4	8	284	2	0-7	30	
59	7-6	27	1,638	95	6-2	7	216	2	0-9	31	
46	7-5	27	1,629	114	7-5	6	261	-	-	32	
60	8-2	26	1,561	109	7-0	6	257	8	3-1	33	
79	11-4	24	1,380	91	6-6	5	177	12	6-8	34	
65	10-2	26	1,346	39	2-9	7	200	-	-	35	
84	12-6	22	1,348	35	2-6	6	306	-	-	36	
99	15-6	25	1,593	50	3-1	6	174	1	0-6	37	
67	8-7	25	1,628	19	1-2	8	322	-	-	38	
61	8-1	25	1,604	26	1-6	6	179	-	-	39	
32	4-8	22	1,567	25	1-6	5	174	-	-	40	
35	5-4	21	1,611	47	2-9	5	176	-	-	41	
34	5-5	22	1,517	46	3-0	6	241	2	0-9	42	
36	5-3	23	1,644	100	6-1	7	283	13	4-6	43	
28	4-1	25	1,732	129	7-4	5	180	2	1-1	44	
32	6-7	25	1,632	127	7-7	6	189	15	7-9	45	
61	10-6	23	1,498	130	8-7	6	179	1	0-6	46	
34	5-7	19	1,374	121	8-8	5	179	5	2-8	47	
104	16-9	22	1,566	116	7-4	7	206	8	3-9	48	
121	13-9	22	1,456	112	7-2	5	203	-	-	49	
69	13-3	24	1,729	152	8-8	6	252	5	2-0	50	
83	14-0	25	1,611	168	10-4	7	279	-	-	51	
37	6-4	27	1,768	156	8-8	7	303	-	-	52	
30	5-7	23	1,570	129	8-2	5	199	2	1-0	53	
35	9-4	25	1,835	221	12-0	6	217	3	1-4	54	
46	7-8	28	1,723	204	11-8	6	217	6	2-3	55	
63	9-3	29	1,675	189	11-3	4	163	2	1-2	56	
68	9-6	29	1,795	476	26-5	5	225	1	0-4	57	
38	6-9	25	1,628	167	10-3	5	227	1	0-4	58	
61	9-1	25	1,659	150	8-9	5	278	-	-	59	
71	11-8	29	1,600	83	6-2	10	415	-	-	60	
80	13-2	31	1,700	95	6-6	11	439	6	1-4	61	
82	14-0	33	1,867	111	5-9	7	306	8	2-6	62	
49	8-7	31	1,809	86	4-8	8	359	12	3-3	63	
47	9-1	34	1,891	86	4-5	9	459	59	12-0	64	
43	8-8	29	1,873	128	6-8	6	287	-	-	65	
66	10-1	28	1,843	170	9-6	8	343	-	-	66	
60	11-9	30	1,870	220	11-8	7	289	-	-	67	

TABLE 14. Labour union figures on number of unions and members reporting and number and percentage unemployed, by industries and months, Canada, June 30, 1920-December 31, 1935—Con.

No.	Month	Total				Manufacturing	
		No. Reporting		Unemployed		No. Reporting	
		Unions	Members	No.	P.C.	Unions	Members
1	January, 1926.....	1,547	146,999	11,972	8-1	409	40,932
2	February.....	1,573	148,068	12,012	8-1	412	40,432
3	March.....	1,547	152,234	11,069	7-3	413	39,636
4	April.....	1,512	151,972	11,157	7-3	390	41,877
5	May.....	1,558	150,765	7,442	4-9	420	40,856
6	June.....	1,502	145,732	5,965	4-1	403	42,927
7	July.....	1,487	140,256	3,288	2-3	390	35,728
8	August.....	1,504	139,845	3,651	2-5	395	33,869
9	September.....	1,540	146,202	4,837	3-3	397	37,112
10	October.....	1,541	151,130	3,929	2-8	422	40,144
11	November.....	1,501	149,627	7,039	4-7	406	41,357
12	December.....	1,560	157,701	9,340	5-9	422	42,844
13	January, 1927.....	1,541	151,496	9,748	6-4	410	41,744
14	February.....	1,671	162,042	10,596	6-5	432	44,898
15	March.....	1,500	156,664	9,975	6-7	414	43,509
16	April.....	1,549	164,948	9,833	6-0	430	45,640
17	May.....	1,578	163,754	8,475	5-2	428	46,442
18	June.....	1,561	167,711	5,410	3-2	422	47,443
19	July.....	1,569	167,648	5,466	3-3	425	48,136
20	August.....	1,602	170,024	6,210	3-7	433	49,032
21	September.....	1,601	171,435	5,366	3-1	432	49,473
22	October.....	1,641	172,737	6,743	3-9	439	47,189
23	November.....	1,581	170,918	8,941	5-2	417	47,772
24	December.....	1,696	180,204	11,822	6-6	464	51,051
25	January, 1928.....	1,668	176,421	12,083	6-8	446	50,553
26	February.....	1,677	178,892	12,534	7-0	447	50,066
27	March.....	1,706	183,840	11,965	6-5	445	50,086
28	April.....	1,642	185,318	9,573	5-2	439	52,167
29	May.....	1,697	182,383	6,657	3-7	463	51,268
30	June.....	1,608	178,578	5,800	3-2	444	50,274
31	July.....	1,600	180,111	4,539	2-5	452	51,372
32	August.....	1,604	181,022	4,274	2-4	450	50,826
33	September.....	1,626	181,615	4,068	2-2	459	51,918
34	October.....	1,652	184,580	5,705	3-1	465	53,009
35	November.....	1,672	186,528	7,749	4-2	459	53,181
36	December.....	1,695	190,839	12,553	6-6	468	54,361
37	January, 1929.....	1,687	188,152	11,878	6-3	474	52,832
38	February.....	1,673	188,888	12,884	6-8	475	54,167
39	March.....	1,677	194,890	11,968	6-7	479	55,902
40	April.....	1,651	188,874	10,382	5-5	468	55,943
41	May.....	1,642	193,787	7,830	4-0	475	66,947
42	June.....	1,688	198,949	6,723	2-9	469	66,387
43	July.....	1,690	200,115	6,025	3-0	472	58,159
44	August.....	1,709	204,547	7,078	3-6	479	66,667
45	September.....	1,762	206,617	7,854	3-7	485	59,213
46	October.....	1,750	212,328	12,716	6-0	489	59,780
47	November.....	1,761	212,973	19,852	9-3	497	59,977
48	December.....	1,790	219,066	24,201	11-4	502	60,363
49	January, 1930.....	1,773	211,811	22,785	10-8	499	69,676
50	February.....	1,780	209,327	24,175	11-5	509	60,438
51	March.....	1,765	211,884	22,912	10-8	497	59,470
52	April.....	1,719	206,326	18,581	9-0	486	68,724
53	May.....	1,679	198,595	20,424	10-3	479	57,016
54	June.....	1,688	201,672	21,292	10-8	490	68,369
55	July.....	1,679	200,122	18,473	9-2	469	58,870
56	August.....	1,630	196,048	18,160	9-3	452	68,309
57	September.....	1,737	205,910	19,422	9-4	501	60,254
58	October.....	1,780	207,433	22,390	10-8	501	62,741
59	November.....	1,798	205,854	28,337	13-9	498	59,132
60	December.....	1,904	219,641	37,437	17-0	515	63,618
61	January, 1931.....	1,860	210,402	33,700	16-0	499	57,341
62	February.....	1,832	202,669	31,602	15-6	481	60,875
63	March.....	1,825	208,387	32,208	15-8	490	69,238
64	April.....	1,807	206,563	30,786	14-9	503	59,725
65	May.....	1,808	198,059	32,163	16-2	488	67,745
66	June.....	1,849	200,509	32,667	16-3	499	56,688
67	July.....	1,862	199,923	32,396	16-2	498	57,099
68	August.....	1,833	197,863	31,247	15-8	493	57,238
69	September.....	1,841	193,849	35,048	18-1	494	68,439
70	October.....	1,884	192,039	35,325	18-3	505	65,863
71	November.....	1,819	189,031	35,206	18-0	487	54,324
72	December.....	1,874	188,559	39,713	21-1	504	62,928

TABLE 14. Labour union figures on number of unions and members reporting and number and percentage unemployed, by industries and months, Canada, June 30, 1920-December 31, 1935—Con.

Manufacturing		Mining and Quarrying				Building and Construction				Σ
Unemployed		No. Reporting		Unemployed		No. Reporting		Unemployed		
No.	P.C.	Unions	Members	No.	P.C.	Unions	Members	No.	P.C.	
3,253	7-9	29	10,097	1,391	13-8	168	12,963	3,453	26-6	1
3,090	5-2	30	9,354	2,040	21-8	176	12,247	3,263	26-6	2
2,072	5-2	31	9,319	1,544	17-8	178	14,250	2,978	20-9	3
4,096	9-8	32	10,553	1,509	17-1	172	15,772	1,724	12-8	4
3,918	9-9	31	9,407	951	10-1	170	12,339	911	7-4	5
3,555	8-3	32	9,901	629	8-4	161	11,694	512	4-4	6
1,160	3-2	27	9,469	577	6-1	160	12,875	463	3-8	7
1,223	3-8	29	11,278	467	4-1	165	13,344	828	4-7	8
2,531	6-8	29	10,291	73	0-7	175	14,602	809	5-6	9
1,501	3-7	30	11,058	38	0-3	165	14,390	1,123	7-8	10
2,604	6-3	28	9,284	1,005	10-8	165	15,360	1,651	12-7	11
3,128	7-3	31	13,016	569	5-1	174	16,167	3,133	19-2	12
3,238	7-8	28	10,980	140	1-3	178	17,092	3,851	22-6	13
2,935	6-8	34	15,310	491	3-2	180	17,364	4,223	24-3	14
2,250	5-2	26	11,949	1,471	12-3	168	16,823	3,148	18-7	15
4,489	9-9	34	15,884	1,251	8-0	166	17,796	2,111	11-0	16
4,121	8-9	28	12,293	1,064	8-7	175	17,972	1,679	9-3	17
1,819	3-8	33	12,958	507	3-0	170	18,421	1,481	8-0	18
2,309	4-8	32	13,602	58	0-4	173	18,764	1,289	6-9	19
2,874	5-9	34	14,890	428	2-9	174	18,183	1,551	8-5	20
2,003	4-0	37	15,347	110	0-7	173	17,768	1,478	8-3	21
2,339	5-0	40	16,713	462	2-8	181	18,552	1,847	10-6	22
3,429	7-2	38	15,629	447	2-9	190	19,142	2,555	13-2	23
4,764	9-3	40	17,091	478	2-8	184	19,241	3,670	19-2	24
4,170	8-2	43	16,580	476	2-9	191	19,206	4,463	23-2	25
3,647	7-3	41	16,843	1,051	6-3	195	19,221	4,452	23-2	26
2,039	6-1	42	17,162	1,789	10-4	201	21,281	4,067	19-1	27
2,357	4-5	41	17,368	1,849	10-6	187	21,010	2,864	13-6	28
2,248	4-4	46	15,739	1,188	7-5	199	21,180	1,748	8-2	29
3,238	8-4	38	15,528	401	2-0	205	23,558	911	3-0	30
1,968	3-8	43	17,668	819	4-7	188	22,176	765	3-3	31
1,795	3-5	41	17,436	286	1-6	191	23,841	842	3-5	32
1,439	2-8	43	17,262	827	3-8	206	24,484	719	2-9	33
2,381	4-5	45	18,153	219	1-2	196	23,638	1,212	5-1	34
2,961	5-6	47	18,750	128	0-7	210	25,437	3,368	9-3	35
4,506	8-3	48	20,093	904	4-5	216	26,544	4,127	15-5	36
2,942	5-6	46	17,759	261	1-5	215	26,437	5,024	19-0	37
3,514	6-5	48	19,322	1,059	5-5	207	27,871	4,721	19-5	38
2,172	3-9	49	17,853	1,189	6-5	222	26,837	4,797	17-0	39
3,915	7-0	49	15,991	1,339	8-4	208	25,051	2,928	11-3	40
2,735	4-8	43	16,015	921	5-8	205	30,680	2,504	8-2	41
1,309	2-3	49	18,531	847	4-6	208	30,032	2,259	7-6	42
2,050	3-0	45	17,553	312	1-8	208	29,341	2,055	7-0	43
2,326	3-9	47	16,890	845	5-0	208	30,451	2,201	7-2	44
2,053	3-5	43	15,802	428	2-7	205	30,581	2,823	8-8	45
4,691	7-8	47	18,712	507	2-6	217	32,428	3,368	10-4	46
7,666	12-8	49	18,888	737	3-9	228	32,468	5,279	16-4	47
8,274	13-7	47	17,925	895	5-0	221	31,228	7,996	25-0	48
5,239	8-8	48	18,927	1,254	6-8	222	31,054	9,690	30-8	49
5,120	8-5	47	18,629	1,564	8-4	218	30,523	10,390	34-0	50
4,376	7-4	46	18,809	2,216	11-8	223	31,176	9,496	30-5	51
3,887	6-9	47	17,707	1,050	11-0	211	29,171	6,769	23-2	52
7,077	12-4	44	17,305	1,596	9-2	210	28,927	6,741	23-5	53
7,135	12-2	46	16,579	1,142	6-9	217	30,373	7,960	26-2	54
4,270	7-3	43	15,764	1,372	8-7	214	26,638	8,380	28-5	55
4,648	8-0	42	15,852	1,035	6-5	206	27,949	8,052	28-8	56
5,257	8-7	46	17,914	942	5-3	220	29,058	8,114	27-0	57
6,731	10-7	44	17,030	326	1-9	237	29,204	9,203	31-5	58
8,774	14-8	52	18,449	407	2-2	239	30,199	11,397	37-7	59
11,206	17-7	54	20,894	1,591	7-6	260	31,877	14,173	44-5	60
6,864	12-0	56	21,244	1,769	8-3	256	30,994	14,331	46-2	61
6,024	10-6	49	18,454	1,149	6-2	263	31,274	14,743	47-1	62
6,468	9-2	52	20,137	2,499	12-4	250	30,553	13,963	45-7	63
6,399	11-1	50	19,704	2,552	13-0	253	31,558	12,787	40-8	64
10,350	17-9	45	16,639	2,134	12-8	259	29,899	11,286	37-7	65
10,392	18-4	48	18,124	2,377	13-1	263	29,024	11,190	38-6	66
9,263	16-1	50	15,950	3,808	17-5	267	25,540	11,386	39-0	67
5,041	14-0	49	12,443	2,397	17-5	264	27,028	11,307	41-6	68
11,295	20-0	53	18,884	1,174	6-2	255	25,507	12,165	47-5	69
11,718	21-0	51	18,245	1,124	6-2	262	25,931	12,898	49-7	70
10,599	19-5	51	18,770	1,785	9-5	249	25,181	13,073	51-9	71
12,692	23-8	53	19,275	1,929	10-0	261	25,188	14,623	58-1	72

TABLE 14. Labour union figures on number of unions and members reporting and number and percentage unemployed, by industries and months, Canada, June 30, 1920-December 31, 1935—Con.

No.	Month	Transportation				Communication	
		No. Reporting		Unemployed		No. Reporting	
		Unions	Members	No.	P.C.	Unions	Members
1	January, 1926.....	638	56,340	2,999	5.3	66	8,854
2	February.....	637	56,388	2,833	5.0	65	8,590
3	March.....	628	56,982	2,579	4.5	66	8,748
4	April.....	607	56,234	1,995	3.5	66	8,896
5	May.....	618	56,346	1,171	2.1	68	8,966
6	June.....	602	54,527	1,101	2.0	67	8,840
7	July.....	602	55,914	826	1.5	67	8,955
8	August.....	608	54,515	897	1.6	66	8,309
9	September.....	636	55,863	976	1.7	66	8,831
10	October.....	634	57,060	903	1.6	43	10,254
11	November.....	621	55,729	830	1.5	42	9,142
12	December.....	639	56,199	1,711	3.0	49	10,490
13	January, 1927.....	642	56,351	1,969	3.5	46	7,073
14	February.....	639	57,222	2,313	4.0	48	9,728
15	March.....	615	56,889	1,640	2.9	45	7,953
16	April.....	627	56,564	1,604	2.8	55	10,541
17	May.....	629	56,216	1,199	2.1	53	10,547
18	June.....	638	58,931	1,268	2.2	45	10,286
19	July.....	636	57,345	1,539	2.8	47	9,267
20	August.....	651	57,801	1,084	1.9	52	10,360
21	September.....	655	59,355	1,485	2.5	54	10,417
22	October.....	668	59,163	1,764	3.0	54	11,383
23	November.....	646	58,628	1,962	3.3	53	10,475
24	December.....	700	62,277	2,231	3.6	52	10,350
25	January, 1928.....	662	59,599	2,279	3.8	54	10,620
26	February.....	678	61,335	2,489	4.1	53	10,654
27	March.....	701	63,681	2,537	4.0	54	10,544
28	April.....	668	63,103	2,021	3.2	46	10,654
29	May.....	667	61,505	1,082	1.8	52	10,593
30	June.....	679	62,834	886	1.4	53	10,662
31	July.....	684	62,421	715	1.1	53	10,058
32	August.....	684	63,130	1,070	1.7	53	10,732
33	September.....	676	62,566	1,029	1.6	54	10,761
34	October.....	718	65,353	1,479	2.3	47	9,779
35	November.....	729	64,540	1,682	2.6	49	10,286
36	December.....	720	65,301	2,459	3.8	50	10,451
37	January, 1929.....	725	65,943	3,078	4.7	50	10,490
38	February.....	714	65,809	2,970	4.5	56	10,515
39	March.....	734	67,899	2,835	4.3	49	10,475
40	April.....	707	64,688	2,697	2.6	50	10,517
41	May.....	689	63,989	1,340	2.1	51	10,707
42	June.....	721	67,822	1,047	1.5	52	10,789
43	July.....	717	68,394	1,297	1.9	49	10,624
44	August.....	723	70,574	1,341	1.9	50	10,717
45	September.....	759	73,701	2,100	2.8	52	10,832
46	October.....	752	73,074	3,729	5.1	44	10,919
47	November.....	753	73,720	5,134	7.0	40	10,959
48	December.....	777	74,282	6,151	8.3	42	11,066
49	January, 1930.....	758	72,580	5,323	7.3	43	11,482
50	February.....	753	71,620	5,798	8.1	44	11,389
51	March.....	753	72,902	5,455	7.5	43	11,079
52	April.....	738	72,160	4,941	6.8	42	10,899
53	May.....	718	69,053	4,218	6.1	46	9,132
54	June.....	728	69,975	4,177	6.0	46	9,250
55	July.....	714	68,745	3,993	4.9	42	9,842
56	August.....	705	68,255	3,380	5.0	42	9,235
57	September.....	738	72,102	3,020	5.4	41	8,950
58	October.....	753	71,742	4,650	6.5	40	8,006
59	November.....	756	70,305	5,738	8.2	42	9,212
60	December.....	809	74,473	7,908	10.6	42	9,407
61	January, 1931.....	794	72,864	7,984	11.0	42	8,896
62	February.....	789	70,304	7,312	10.4	40	8,738
63	March.....	782	71,854	7,843	10.9	39	8,678
64	April.....	759	71,603	6,992	9.8	39	8,735
65	May.....	763	67,895	6,229	9.2	40	8,760
66	June.....	786	70,795	6,760	9.6	44	8,879
67	July.....	784	69,472	6,171	8.9	40	8,468
68	August.....	779	68,655	6,493	9.5	42	8,523
69	September.....	787	67,637	8,115	12.0	42	8,384
70	October.....	783	66,590	7,228	10.9	42	8,606
71	November.....	779	65,515	7,242	11.1	41	8,505
72	December.....	790	65,189	8,022	12.3	42	8,455

TABLE 14. Labour union figures on number of unions and members reporting and number and percentage unemployed, by industries and months, Canada, June 30, 1920-December 31, 1935—Con.

Communication		Lumbering and Logging				Retail Trade				C %
Unemployed		No. Reporting		Unemployed		No. Reporting		Unemployed		
No.	P.C.	Unions	Members	No.	P.C.	Unions	Members	No.	P.C.	
170	1-9	2	530	-	-	5	285	1	0-4	1
111	1-3	3	4,173	1,100	26-4	6	508	20	3-9	2
111	1-3	2	6,700	1,300	19-4	6	1,030	2	0-2	3
57	0-6	3	3,528	1,050	29-8	6	850	2	0-3	4
12	0-1	3	4,390	210	4-8	7	1,065	4	0-4	5
6	0-1	2	455	-	-	5	809	2	0-2	6
7	0-1	1	220	-	-	4	783	-	-	7
10	0-1	2	370	-	-	5	785	2	0-3	8
9	0-1	2	495	175	35-4	7	1,194	1	0-1	9
11	0-1	1	208	5	2-4	4	208	-	-	10
8	0-1	1	173	-	-	6	843	-	-	11
110	1-1	2	358	50	14-0	5	799	-	-	12
23	0-3	1	185	3	1-6	5	809	-	-	13
69	0-7	2	392	-	-	6	823	1	0-1	14
69	0-9	1	175	-	-	6	750	1	0-1	15
10	0-1	1	194	-	-	5	556	1	0-2	16
9	0-1	2	410	-	-	5	543	-	-	17
12	0-1	2	360	-	-	4	498	1	0-2	18
8	0-1	1	192	-	-	5	553	1	0-2	19
3	0-0	2	387	-	-	6	821	2	0-2	20
7	0-1	2	415	-	-	5	590	1	0-2	21
17	0-1	2	783	-	-	6	752	2	0-3	22
8	0-1	2	793	-	-	5	461	1	0-2	23
11	0-1	2	794	-	-	7	943	6	0-6	24
10	0-1	2	794	-	-	5	713	9	1-3	25
57	0-5	2	810	-	-	6	1,012	12	1-2	26
41	0-4	2	810	25	3-1	6	1,000	7	0-7	27
60	0-0	2	810	25	3-1	6	970	12	1-2	28
6	0-1	5	896	85	9-5	6	940	7	0-7	29
6	0-1	4	836	139	16-0	6	993	4	0-4	30
6	0-1	4	818	8	1-0	5	745	8	1-1	31
6	0-1	3	797	100	12-5	5	734	6	0-8	32
6	0-1	2	794	50	6-3	7	988	4	0-4	33
3	0-0	2	794	100	12-0	6	742	5	0-7	34
18	0-2	2	794	-	-	6	735	5	0-7	35
7	0-1	1	175	-	-	6	742	3	0-4	36
53	0-5	1	731	-	-	7	759	6	0-8	37
17	0-2	2	906	50	5-5	8	1,038	91	8-8	38
70	0-7	2	906	25	2-8	8	1,297	94	5-5	39
15	0-1	3	952	174	18-3	8	1,363	12	0-9	40
10	0-1	2	866	-	-	8	1,548	10	0-8	41
4	0-0	2	881	-	-	7	1,455	7	0-5	42
5	0-0	3	921	10	1-1	8	1,426	4	0-3	43
7	0-1	4	991	68	6-9	7	1,413	1	0-1	44
6	0-1	5	1,004	47	4-7	8	1,293	32	2-5	45
37	0-3	4	1,189	22	1-9	8	1,453	2	0-1	46
81	0-7	4	1,200	75	6-3	7	1,499	152	10-2	47
78	0-7	6	1,249	34	2-7	6	1,179	1	0-1	48
204	1-8	4	1,130	138	12-2	5	882	-	-	49
363	3-2	5	1,243	161	13-0	5	1,163	-	-	50
291	2-6	5	1,185	212	17-9	6	1,294	-	-	51
352	3-2	5	1,214	144	11-9	5	1,229	-	-	52
131	1-4	4	920	117	12-7	5	1,286	-	-	53
180	1-9	4	856	20	2-3	5	1,303	-	-	54
105	1-1	3	849	188	22-2	7	1,341	-	-	55
77	0-8	4	938	178	18-8	6	1,252	-	-	56
99	1-1	4	1,381	237	17-2	7	1,305	-	-	57
364	4-5	3	788	68	8-6	5	1,290	1	0-1	58
581	6-3	4	934	189	20-2	6	1,309	4	0-3	59
630	6-7	5	1,344	554	41-2	6	1,263	2	0-2	60
646	7-3	4	1,184	362	30-6	5	1,238	42	3-4	61
618	7-8	5	896	290	32-4	7	999	15	1-5	62
590	6-0	4	1,207	410	34-0	6	820	16	1-8	63
605	6-9	5	1,259	469	37-3	5	775	16	2-1	64
623	7-1	7	910	289	31-8	5	1,237	61	4-9	65
588	6-6	4	878	245	27-9	4	1,155	5	0-4	66
733	9-2	4	850	287	33-8	5	1,312	26	2-0	67
540	6-3	4	784	289	37-8	5	1,298	32	2-5	68
754	9-0	5	895	220	24-6	5	1,250	45	3-6	69
447	5-2	3	824	281	34-1	5	1,248	36	2-8	70
638	7-5	3	704	212	30-1	4	1,208	6	0-5	71
819	9-7	4	752	155	20-0	4	1,064	3	0-3	72

TABLE 14. Labour union figures on number of unions and members reporting and number and percentage unemployed, by industries and months, Canada, June 30, 1920-December 31, 1935—Con.

No.	Month	Public Employment				Fishing	
		No. Reporting		Unemployed		No. Reporting	
		Unions	Members	No.	P.C.	Unions	Members
1	January, 1926.....	129	11,249	127	1-1	2	779
2	February.....	139	11,239	151	1-3	2	275
3	March.....	125	10,212	126	1-2	3	804
4	April.....	136	10,746	92	0-0	3	775
5	May.....	133	11,623	20	0-2	3	775
6	June.....	127	11,458	1	0-0	3	795
7	July.....	133	11,429	14	0-1	1	230
8	August.....	131	10,775	13	0-1	2	770
9	September.....	135	11,993	6	0-1	3	775
10	October.....	133	11,693	24	0-2	3	775
11	November.....	134	11,508	139	1-0	3	775
12	December.....	132	11,682	140	1-2	3	775
13	January, 1927.....	131	11,303	143	1-3	2	770
14	February.....	134	12,293	188	1-5	2	725
15	March.....	131	12,110	82	0-7	2	745
16	April.....	127	12,275	81	0-7	3	750
17	May.....	142	12,507	19	0-1	3	1,345
18	June.....	137	12,524	66	0-5	3	1,365
19	July.....	130	12,929	1	0-0	5	2,132
20	August.....	137	12,353	3	0-0	3	1,355
21	September.....	136	12,592	9	0-1	2	755
22	October.....	137	12,470	2	0-0	4	860
23	November.....	134	12,744	87	0-7	2	765
24	December.....	134	12,773	129	1-0	2	750
25	January, 1928.....	141	12,505	154	1-2	2	755
26	February.....	130	12,855	121	0-9	3	1,014
27	March.....	143	13,180	102	0-8	3	1,019
28	April.....	140	13,145	84	0-6	3	1,019
29	May.....	145	13,097	11	0-1	4	1,319
30	June.....	62	6,583	-	-	4	1,619
31	July.....	67	6,009	3	0-0	4	1,679
32	August.....	64	6,454	11	0-2	3	1,415
33	September.....	65	6,205	26	0-4	3	1,055
34	October.....	65	6,888	14	0-2	2	755
35	November.....	65	6,596	100	1-5	2	756
36	December.....	65	6,680	107	1-6	2	755
37	January, 1929.....	68	6,802	102	1-5	2	755
38	February.....	69	7,040	55	0-8	2	755
39	March.....	64	6,872	70	1-0	2	844
40	April.....	63	6,984	58	0-8	3	844
41	May.....	67	7,090	47	0-7	3	848
42	June.....	63	6,637	36	0-5	3	784
43	July.....	61	6,835	35	0-6	3	770
44	August.....	69	7,220	-	-	3	765
45	September.....	72	7,271	62	0-9	4	820
46	October.....	65	7,141	76	1-1	3	763
47	November.....	65	7,114	162	2-3	3	763
48	December.....	68	7,495	161	2-0	4	812
49	January, 1930.....	67	7,861	193	2-6	4	815
50	February.....	64	6,694	107	1-6	4	841
51	March.....	67	8,139	158	1-9	4	825
52	April.....	67	7,955	39	0-5	3	783
53	May.....	65	8,117	58	0-7	3	775
54	June.....	60	7,747	29	0-4	3	783
55	July.....	63	7,594	44	0-6	3	763
56	August.....	65	7,073	33	0-5	4	1,263
57	September.....	61	7,079	52	0-7	4	1,363
58	October.....	68	7,794	18	0-2	4	1,313
59	November.....	71	8,233	105	1-3	3	1,325
60	December.....	72	8,283	80	1-0	5	1,370
61	January, 1931.....	73	7,660	159	2-1	4	1,362
62	February.....	69	8,982	131	1-9	3	1,305
63	March.....	65	7,029	104	1-6	4	1,362
64	April.....	67	7,234	7	0-1	4	1,382
65	May.....	73	7,451	158	2-1	3	1,306
66	June.....	72	7,664	31	0-4	3	1,305
67	July.....	72	7,399	23	0-3	3	1,305
68	August.....	70	7,612	11	0-1	3	1,305
69	September.....	71	7,661	22	0-3	3	1,285
70	October.....	74	7,840	176	2-2	4	1,280
71	November.....	69	7,524	106	1-4	3	1,332
72	December.....	73	8,594	207	2-3	4	1,137

TABLE 14. Labour union figures on number of unions and members reporting and number and percentage unemployed, by industries and months, Canada, June 30, 1920-December 31, 1935—Con.

Fishing		Miscellaneous								Σ
		Total				Hotels and Restaurants				
		No. Reporting		Unemployed		No. Reporting		Unemployed		
No.	P.C.	Unions	Members	No.	P.C.	Unions	Members	No.	P.C.	
201	25.8	101	4,970	377	7.6	8	1,005	105	10.4	1
12	4.4	103	4,872	392	8.0	7	790	97	12.3	2
10	1.3	95	4,553	250	5.5	6	717	52	7.3	3
15	1.9	97	4,842	287	6.2	6	752	75	10.0	4
10	1.3	105	4,899	235	4.8	6	770	48	6.0	5
11	1.4	98	4,316	148	3.4	5	530	6	1.1	6
30	13.0	90	4,653	211	4.5	6	812	42	5.2	7
20	2.6	100	4,819	191	4.0	6	835	65	7.8	8
20	2.6	96	5,056	240	4.7	7	1,054	99	9.4	9
40	5.2	105	5,339	284	5.3	7	1,080	113	10.6	10
100	12.9	98	5,463	352	6.4	7	1,131	124	11.0	11
100	12.9	103	5,332	302	5.7	7	1,105	84	7.6	12
30	3.9	98	5,198	341	6.6	7	1,106	96	8.7	13
30	4.1	97	5,287	340	6.5	6	945	108	11.4	14
-	-	100	5,664	314	5.5	7	1,155	91	7.9	15
10	1.3	101	5,048	276	5.3	7	980	85	8.7	16
30	5.9	109	5,179	343	6.6	8	1,172	62	5.3	17
10	0.7	107	4,935	240	5.0	7	1,087	25	3.2	18
20	0.9	109	4,731	208	4.4	5	716	16	2.2	19
20	1.5	110	5,042	249	4.9	8	910	78	8.3	20
20	2.6	105	4,823	253	5.2	7	1,112	85	7.6	21
30	3.6	110	4,872	280	5.7	6	874	100	11.4	22
150	19.9	104	4,519	302	6.7	6	815	101	12.4	23
200	26.7	111	4,934	353	6.7	8	988	90	9.1	24
20	2.6	112	5,087	501	9.8	8	959	93	9.7	25
270	27.5	113	5,082	400	8.0	8	963	105	10.9	26
-	-	108	5,083	358	7.0	7	947	84	8.9	27
-	-	110	5,072	301	5.9	7	948	81	8.5	28
15	1.1	116	5,793	260	4.6	8	946	69	7.3	29
-	-	113	5,691	219	3.8	9	990	59	6.0	30
-	-	110	5,665	249	4.4	9	950	56	5.8	31
10	0.7	113	5,657	184	3.3	9	958	26	2.6	32
8	0.8	111	5,491	160	2.9	9	975	38	3.9	33
30	4.0	106	5,169	262	5.1	7	764	75	9.8	34
150	19.9	112	5,454	330	6.1	7	964	85	8.8	35
150	19.9	119	5,737	290	5.1	6	932	47	5.0	36
50	6.8	110	5,654	352	6.2	6	925	55	5.9	37
-	-	109	5,479	347	6.3	6	941	69	7.3	38
10	1.2	119	5,865	302	5.1	6	939	46	4.9	39
22	2.6	111	5,641	222	3.9	6	927	44	4.7	40
31	3.7	106	5,097	232	4.6	7	945	95	10.1	41
20	2.6	114	5,531	194	3.5	6	873	45	5.2	42
10	1.3	124	6,092	217	3.6	6	903	20	3.3	43
12	1.6	119	5,968	277	4.5	6	854	48	6.4	44
10	1.2	119	6,100	263	4.3	6	921	43	4.9	45
22	2.9	121	5,871	252	4.5	5	662	22	3.3	46
150	19.7	117	6,394	398	6.2	7	1,085	76	7.0	47
200	24.6	117	7,485	421	5.5	7	1,126	51	4.3	48
150	18.4	122	6,798	604	8.9	7	1,154	102	8.8	49
20	2.4	118	6,787	652	9.6	7	1,153	91	7.9	50
15	1.9	121	6,952	696	10.0	7	1,174	89	7.6	51
10	1.3	115	6,784	489	7.2	7	1,158	90	7.8	52
10	1.3	116	6,070	476	7.8	6	898	68	7.6	53
10	1.3	119	6,418	639	10.0	8	1,083	180	16.8	54
-	-	116	6,622	715	10.8	8	1,151	171	14.9	55
15	1.9	114	5,924	733	12.4	4	542	90	16.5	56
20	1.5	115	6,494	781	12.0	7	1,054	92	9.3	57
30	2.3	127	7,525	900	13.9	6	1,511	285	18.9	58
180	18.6	129	6,759	962	14.2	7	934	130	13.2	59
158	11.5	126	7,112	1,075	15.1	9	1,348	144	10.7	60
150	11.0	134	7,619	1,303	18.3	11	1,940	449	23.1	61
250	19.2	127	6,842	1,072	15.7	7	1,198	252	21.0	62
55	4.0	125	7,494	1,204	17.0	10	1,673	262	15.7	63
33	2.4	132	6,588	929	14.1	6	1,027	99	9.6	64
15	1.1	131	6,192	1,038	16.8	4	680	117	17.2	65
20	1.9	133	6,093	1,050	17.2	6	791	211	26.7	66
20	1.6	141	5,931	1,129	19.0	5	682	167	25.2	67
100	7.7	124	6,025	1,137	18.6	3	550	110	20.0	68
75	6.0	120	5,847	1,183	20.2	4	625	114	18.2	69
200	15.6	184	6,262	1,218	19.5	8	888	168	18.9	70
400	20.0	183	5,971	1,147	19.9	6	713	120	16.2	71
230	20.2	183	5,982	1,143	19.1	7	761	143	18.8	72

TABLE 14. Labour union figures on number of unions and members reporting and number and percentage unemployed, by industries and months, Canada, June 30, 1920-December 31, 1935—Con.

No.	Month	Miscellaneous					
		Barbers				Musicians and Theatre Employees	
		No. Reporting		Unemployed		No. Reporting	
		Unions	Members	No.	P.C.	Unions	Members
1	January, 1926.....	29	1,159	25	2.2	23	562
2	February.....	33	1,269	18	1.4	23	517
3	March.....	29	1,146	17	1.5	23	565
4	April.....	30	1,145	6	0.5	22	530
5	May.....	34	1,330	15	1.1	25	602
6	June.....	29	1,113	1	0.1	27	676
7	July.....	30	1,273	1	0.1	24	673
8	August.....	31	1,268	-	-	24	561
9	September.....	30	1,309	6	0.5	25	557
10	October.....	32	1,357	5	0.4	28	656
11	November.....	29	1,258	12	1.0	26	620
12	December.....	31	1,286	9	0.7	26	635
13	January, 1927.....	31	1,335	30	2.2	25	587
14	February.....	30	1,269	21	1.7	25	593
15	March.....	31	1,359	13	0.9	27	676
16	April.....	30	1,292	8	0.6	27	695
17	May.....	34	1,428	9	0.6	27	694
18	June.....	34	1,410	24	1.7	26	643
19	July.....	34	1,456	6	0.4	29	714
20	August.....	32	1,537	3	0.1	27	637
21	September.....	32	1,311	17	1.3	27	676
22	October.....	33	1,417	21	1.5	28	754
23	November.....	31	1,228	27	2.2	29	855
24	December.....	31	1,242	14	1.1	30	858
25	January, 1928.....	31	1,314	116	8.8	30	902
26	February.....	32	1,282	41	3.2	27	708
27	March.....	29	1,160	20	2.2	31	959
28	April.....	29	1,113	15	1.3	31	886
29	May.....	35	1,552	6	0.4	29	837
30	June.....	33	1,440	5	0.3	30	862
31	July.....	32	1,435	3	0.1	28	843
32	August.....	32	1,407	6	0.4	31	847
33	September.....	33	1,404	14	1.0	29	822
34	October.....	32	1,477	32	2.2	28	744
35	November.....	33	1,270	35	2.8	31	851
36	December.....	34	1,339	27	2.0	32	899
37	January, 1929.....	32	1,488	38	2.6	27	799
38	February.....	34	1,515	33	2.2	27	705
39	March.....	34	1,561	31	2.0	27	718
40	April.....	34	1,553	21	1.4	27	687
41	May.....	31	1,367	17	1.2	28	759
42	June.....	34	1,513	4	0.3	31	793
43	July.....	34	1,496	3	0.1	30	801
44	August.....	30	1,369	4	0.3	31	810
45	September.....	35	1,450	21	1.4	32	853
46	October.....	35	1,529	21	1.4	31	848
47	November.....	33	1,533	19	1.2	31	811
48	December.....	35	1,566	15	1.0	30	825
49	January, 1930.....	36	1,577	41	2.6	32	919
50	February.....	32	1,410	18	1.3	32	1,010
51	March.....	31	1,365	29	1.9	34	1,059
52	April.....	29	1,338	23	1.7	31	947
53	May.....	32	1,325	21	1.6	31	894
54	June.....	32	1,280	19	1.5	31	948
55	July.....	31	1,309	10	1.2	30	928
56	August.....	33	1,310	20	1.5	29	781
57	September.....	32	1,432	27	1.9	28	801
58	October.....	33	1,478	31	2.1	30	922
59	November.....	34	1,389	46	3.3	27	810
60	December.....	34	1,472	37	2.5	32	804
61	January, 1931.....	31	1,379	44	3.2	32	788
62	February.....	32	1,345	39	2.7	32	876
63	March.....	31	1,328	58	4.4	34	927
64	April.....	35	1,475	33	2.2	32	833
65	May.....	32	1,227	24	1.9	33	939
66	June.....	29	1,168	26	2.2	32	891
67	July.....	42	1,264	41	3.2	31	854
68	August.....	30	1,152	32	2.8	29	741
69	September.....	28	1,075	32	3.0	30	783
70	October.....	30	1,096	39	3.6	33	791
71	November.....	31	1,181	49	4.1	28	860
72	December.....	32	1,293	49	3.1	30	732

TABLE 14. Labour union figures on number of unions and members reporting and number and percentage unemployed, by industries and months, Canada, June 30, 1920-December 31, 1935—Con.

Miscellaneous											
Musicians and Theatre Employees		Stationary Engineers and Firemen				Others					
Unemployed		No. Reporting		Unemployed		No. Reporting		Unemployed			
No.	P.C.	Unions	Members	No.	P.C.	Unions	Members	No.	P.C.		
50	8-9	33	1,946	197	10-1	8	298	-	-	1	
47	9-1	33	2,901	220	11-4	7	291	1	0-3	2	
69	10-3	27	1,758	123	7-0	10	367	-	-	3	
60	11-3	30	1,837	135	7-3	9	378	11	2-9	4	
64	10-6	32	1,883	104	5-5	8	308	6	1-0	5	
81	12-0	25	1,552	56	3-6	12	445	4	0-9	6	
111	19-4	29	1,695	54	3-2	7	300	3	1-0	7	
65	11-6	30	1,753	56	3-2	9	372	3	1-3	8	
47	8-0	26	1,741	84	4-8	8	365	4	1-1	9	
40	7-0	27	1,750	114	6-5	11	496	6	2-10	10	
60	8-1	28	2,082	162	7-8	8	372	4	1-11	11	
49	7-7	32	1,960	160	8-2	7	346	-	-	12	
52	8-9	26	1,778	158	8-9	9	393	6	1-3	13	
69	11-0	30	2,185	147	6-7	6	285	5	1-7	14	
73	10-8	28	2,173	129	5-9	7	301	9	3-0	15	
73	10-5	32	1,853	105	5-7	5	228	5	2-2	16	
90	13-6	34	1,626	177	10-9	6	288	5	1-7	17	
73	11-4	35	1,559	111	7-1	6	295	3	1-3	18	
90	13-4	35	1,550	84	5-4	6	305	4	1-4	19	
73	11-5	36	1,535	88	5-6	7	369	7	1-9	20	
60	8-9	33	1,439	85	5-9	6	286	6	2-12	21	
54	7-2	36	1,457	99	6-8	7	370	6	1-6	22	
51	5-8	34	1,424	120	8-4	4	167	3	1-8	23	
60	7-0	37	1,563	156	10-0	5	283	13	4-6	24	
101	11-2	37	1,567	175	11-2	6	345	16	4-6	25	
42	5-9	41	1,857	202	10-9	5	272	10	5-9	26	
43	4-6	36	1,764	192	10-9	5	273	13	4-8	27	
48	5-4	38	1,867	143	7-7	5	258	14	5-4	28	
61	7-3	38	2,152	129	6-0	6	306	4	1-3	29	
74	8-6	36	2,130	69	3-2	5	269	5	3-0	30	
107	13-7	36	2,148	71	3-3	5	270	13	4-8	31	
99	10-4	36	2,132	60	2-8	5	253	4	1-5	32	
63	6-4	35	2,023	50	2-5	5	267	5	1-9	33	
36	4-8	34	1,947	114	5-9	5	237	5	2-1	34	
80	9-8	36	2,030	120	5-9	6	309	4	1-3	35	
94	10-5	37	2,136	113	5-3	10	431	9	2-1	36	
68	9-6	36	2,134	178	8-3	9	398	13	3-3	37	
68	8-2	33	1,932	168	8-7	9	377	19	5-0	38	
62	8-6	42	2,197	139	6-3	10	450	24	5-3	39	
48	7-0	36	2,065	91	4-4	8	409	18	4-4	40	
45	5-9	33	1,672	53	3-2	7	354	22	6-2	41	
99	12-5	37	1,969	30	1-5	6	360	16	4-4	42	
83	10-2	45	2,441	91	3-7	9	451	12	2-7	43	
64	7-9	45	2,579	156	6-0	7	327	5	1-5	44	
60	7-5	38	2,394	126	5-3	8	446	5	1-4	45	
60	7-1	41	2,400	154	6-4	8	441	5	1-4	46	
69	8-5	38	2,525	222	8-8	8	390	10	2-6	47	
74	9-0	39	3,674	274	7-5	6	294	7	2-4	48	
79	8-6	40	2,829	376	13-3	7	319	6	1-9	49	
150	14-9	40	2,889	387	13-4	7	325	6	1-8	50	
123	11-6	41	2,742	318	11-6	8	392	139	22-3	51	
86	9-1	38	2,579	244	9-5	10	769	46	6-0	52	
120	14-9	38	2,372	218	9-2	9	613	40	6-5	53	
116	12-2	39	2,504	261	10-4	9	603	63	10-4	54	
119	12-8	40	2,786	334	12-0	7	454	75	16-5	55	
103	13-2	40	2,770	414	14-9	8	514	106	20-6	56	
129	16-1	39	2,664	395	14-8	9	563	128	22-7	57	
109	11-8	45	3,013	457	15-2	11	601	117	19-5	58	
82	16-1	51	3,035	615	20-3	9	547	89	16-3	59	
112	13-6	54	2,869	663	22-6	10	558	119	21-3	60	
103	13-3	50	2,928	661	22-6	10	684	134	22-9	61	
114	13-0	47	2,939	580	19-8	9	464	85	18-3	62	
148	16-0	49	3,055	742	24-3	9	453	80	17-7	63	
130	15-6	50	2,818	588	20-9	9	435	79	18-2	64	
143	15-2	53	2,894	675	23-3	9	442	79	17-9	65	
182	20-4	56	2,807	686	20-9	10	436	45	10-3	66	
184	21-5	53	2,703	674	24-9	10	445	63	14-1	67	
157	21-2	53	3,078	771	25-0	10	504	67	13-3	68	
146	18-6	54	2,559	833	29-1	10	505	69	11-6	69	
91	11-5	55	3,131	876	28-0	8	356	44	12-4	70	
127	14-8	55	2,814	810	28-8	9	403	40	9-9	71	
104	14-2	54	2,711	804	29-7	10	483	52	10-7	72	

TABLE 14. Labour union figures on number of unions and members reporting and number and percentage unemployed, by industries and months, Canada, June 30, 1920-December 31, 1935—Con.

No.	Month	Total				Manufacturing	
		No. Reporting		Unemployed		No. Reporting	
		Unions	Members	No.	P.C.	Unions	Members
1	January, 1932.....	1,849	187,891	41,330	22.0	492	51,874
2	February.....	1,819	183,159	37,754	20.8	498	51,475
3	March.....	1,828	181,396	36,951	20.4	485	50,949
4	April.....	1,800	178,075	40,930	23.0	479	48,999
5	May.....	1,800	175,411	38,592	22.1	478	47,002
6	June.....	1,791	175,006	38,372	21.9	470	47,883
7	July.....	1,806	171,831	37,808	21.8	481	47,289
8	August.....	1,762	163,530	34,949	21.4	455	43,480
9	September.....	1,724	162,153	33,148	20.4	456	43,337
10	October.....	1,765	162,632	35,738	22.0	475	46,056
11	November.....	1,797	161,058	36,783	22.8	478	43,347
12	December.....	1,764	155,298	39,607	25.5	467	42,017
13	January, 1933.....	1,808	155,745	39,909	25.5	485	44,447
14	February.....	1,762	150,158	36,494	24.3	460	40,899
15	March.....	1,735	151,307	38,002	25.1	464	42,941
16	April.....	1,719	153,623	37,659	24.5	457	43,698
17	May.....	1,704	148,015	35,201	23.8	457	42,258
18	June.....	1,699	150,040	32,758	21.8	453	43,145
19	July.....	1,714	151,363	32,131	21.2	453	43,804
20	August.....	1,705	151,233	30,096	19.9	451	43,599
21	September.....	1,762	149,310	29,492	19.8	475	42,229
22	October.....	1,734	148,703	29,417	19.8	458	42,117
23	November.....	1,722	146,948	29,908	20.4	454	41,461
24	December.....	1,726	146,770	30,799	21.0	461	41,906
25	January, 1934.....	1,728	149,630	31,698	21.2	468	42,455
26	February.....	1,734	148,048	29,558	20.0	462	41,626
27	March.....	1,656	145,476	28,438	19.5	449	42,282
28	April.....	1,693	150,638	28,725	19.1	466	46,088
29	May.....	1,705	150,963	28,994	18.5	469	45,105
30	June.....	1,702	159,722	28,774	18.0	459	50,303
31	July.....	1,701	156,357	27,945	17.9	458	46,984
32	August.....	1,706	158,970	26,191	16.5	463	49,193
33	September.....	1,706	159,575	25,204	16.4	469	50,185
34	October.....	1,735	162,086	25,291	16.2	481	51,844
35	November.....	1,735	159,169	27,904	17.5	474	50,301
36	December.....	1,797	161,618	29,112	18.0	481	49,416
37	January, 1935.....	1,783	161,713	29,284	18.1	489	50,523
38	February.....	1,721	160,929	29,227	18.2	466	52,921
39	March.....	1,735	160,062	26,734	16.7	468	51,656
40	April.....	1,735	162,410	27,562	17.0	472	52,690
41	May.....	1,755	164,320	26,078	15.9	473	52,844
42	June.....	1,634	161,759	24,991	15.4	465	51,497
43	July.....	1,723	164,357	24,736	15.1	465	52,003
44	August.....	1,727	166,636	23,540	14.2	469	53,672
45	September.....	1,763	166,764	21,759	13.0	491	52,790
46	October.....	1,777	169,839	22,893	13.3	481	53,596
47	November.....	1,781	169,584	22,575	13.3	485	54,217
48	December.....	1,807	170,503	24,858	14.6	491	52,787

TABLE 14. Labour union figures on number of unions and members reporting and number and percentage unemployed, by industries and months, Canada, June 30, 1920-December 31, 1935—Con.

Manufacturing		Mining and Quarrying				Building and Construction				No.
Unemployed		No. Reporting		Unemployed		No. Reporting		Unemployed		
No.	P.C.	Unions	Members	No.	P.C.	Unions	Members	No.	P.C.	
11,118	21.4	63	19,635	2,416	12.3	260	25,906	16,630	63.8	1
8,965	17.4	65	19,612	1,383	6.9	258	25,096	16,398	65.3	2
9,366	18.4	62	18,272	1,613	9.9	248	24,665	15,292	62.3	3
12,517	25.6	50	17,115	2,304	13.5	249	24,230	16,205	62.7	4
11,609	24.2	48	16,943	2,423	14.3	248	23,604	13,694	67.2	5
11,585	24.2	47	16,864	2,084	12.4	245	23,448	14,284	60.8	6
11,383	24.1	47	16,087	2,020	12.6	246	22,334	13,095	58.6	7
9,774	22.5	46	14,711	1,735	11.8	226	21,160	12,940	61.2	8
9,217	21.3	45	15,126	1,859	12.3	229	20,269	12,469	61.6	9
10,928	24.3	46	14,362	1,916	13.3	227	20,329	12,122	69.6	10
11,263	26.0	47	13,698	955	7.0	241	20,812	13,218	63.6	11
12,145	28.9	46	13,245	1,108	8.3	241	20,406	14,131	69.2	12
13,153	29.6	47	13,094	1,131	8.6	245	19,758	12,711	69.4	13
10,459	25.6	43	12,462	852	6.8	230	18,943	12,574	71.7	14
12,107	28.2	45	12,114	2,114	17.5	219	18,368	12,048	71.0	15
12,325	28.3	53	13,915	2,382	17.1	220	18,533	12,367	66.7	16
12,046	28.5	50	13,003	2,795	21.5	210	16,965	11,135	65.0	17
10,553	24.5	48	13,136	1,917	14.6	218	18,315	11,452	62.5	18
9,770	22.3	50	13,489	1,936	14.3	203	18,211	11,280	61.9	19
8,767	20.1	53	12,610	2,015	13.1	208	17,635	10,838	63.6	20
8,991	21.3	53	15,385	1,601	9.8	212	15,999	9,930	65.8	21
8,793	20.9	51	14,340	1,155	8.1	210	15,894	10,401	65.4	22
8,505	20.5	51	14,234	1,811	12.7	205	15,061	10,178	67.6	23
9,815	23.4	60	13,648	923	6.8	206	15,139	10,455	69.1	24
9,301	21.9	52	14,740	1,146	7.8	204	16,455	11,386	69.2	25
8,209	19.7	61	14,458	1,184	8.2	217	16,208	11,208	69.2	26
7,035	16.6	47	12,570	1,808	14.4	199	15,555	10,822	69.6	27
7,544	16.4	40	14,008	2,700	19.3	207	17,076	10,470	61.3	28
7,505	15.6	55	16,818	3,557	21.1	204	17,029	10,847	63.7	29
8,644	17.2	54	17,572	3,677	20.9	200	16,745	9,582	57.8	30
8,516	18.1	54	17,547	3,512	20.0	191	17,064	9,723	57.0	31
8,609	13.6	51	17,245	2,426	14.1	202	16,769	9,610	57.3	32
8,019	16.0	62	17,913	2,100	11.7	195	17,227	9,283	53.9	33
8,656	16.7	55	17,798	1,088	6.1	208	16,482	9,087	55.1	34
9,067	18.0	54	17,743	1,065	6.2	201	15,904	9,793	61.6	35
8,809	17.8	53	18,026	854	4.7	207	17,212	10,084	68.6	36
8,637	17.1	56	17,956	1,312	7.3	211	17,247	10,621	61.6	37
8,454	16.0	60	16,267	1,577	10.7	196	16,951	11,043	65.1	38
8,824	13.2	51	16,643	1,885	11.3	206	17,509	10,409	59.2	39
7,097	13.5	63	17,395	2,532	14.6	197	17,271	10,552	61.1	40
8,363	15.9	54	16,724	2,621	15.7	204	18,295	8,319	45.5	41
8,183	15.9	52	17,236	3,141	18.2	182	17,264	7,674	44.4	42
8,088	15.6	54	17,715	3,264	18.4	184	17,162	7,946	46.3	43
7,531	14.0	52	17,574	2,517	14.3	182	17,043	7,515	44.1	44
6,705	12.7	60	16,393	1,562	9.5	191	18,160	7,542	41.5	45
7,630	14.2	52	16,305	820	5.1	188	19,013	8,154	42.8	46
7,397	13.6	53	16,284	929	5.7	197	19,498	8,285	42.5	47
7,981	15.1	55	17,152	1,104	6.4	198	19,696	8,891	45.1	48

TABLE 14. Labour union figures on number of unions and members reporting and number and percentage unemployed, by industries and months, Canada, June 30, 1920-December 31, 1935—Con.

No.	Month	Transportation				Communication	
		No. Reporting		Unemployed		No. Reporting	
		Unions	Members	No.	P.C.	Unions	Members
1	January, 1932.....	787	64,764	8,537	13.2	42	8,446
2	February.....	767	62,916	8,520	13.5	42	8,053
3	March.....	795	63,201	7,801	12.3	41	8,076
4	April.....	778	63,249	8,339	13.2	43	8,061
5	May.....	782	63,031	7,871	12.5	41	8,039
6	June.....	781	62,788	7,386	11.8	41	8,065
7	July.....	783	62,268	8,099	13.0	42	8,070
8	August.....	783	61,418	7,584	12.3	41	7,754
9	September.....	757	61,028	6,884	11.3	40	7,730
10	October.....	772	60,362	7,797	12.9	42	7,790
11	November.....	794	60,455	8,142	13.5	42	7,913
12	December.....	772	57,408	8,914	15.5	42	7,758
13	January, 1933.....	781	57,251	8,904	15.6	44	8,022
14	February.....	785	56,340	8,656	15.4	44	7,609
15	March.....	792	55,874	7,851	14.1	44	7,576
16	April.....	746	56,081	7,895	14.1	43	7,522
17	May.....	749	55,266	6,762	12.2	43	7,515
18	June.....	737	54,332	6,502	12.0	39	7,273
19	July.....	756	54,817	6,844	12.5	44	7,466
20	August.....	748	54,961	6,279	11.4	41	7,207
21	September.....	774	56,496	6,794	12.0	43	7,153
22	October.....	772	55,838	7,026	12.6	41	7,110
23	November.....	768	55,759	7,364	13.2	44	7,316
24	December.....	776	55,938	7,469	13.4	43	7,320
49	January, 1934.....	764	55,298	7,646	13.8	41	7,173
50	February.....	763	54,619	8,114	12.5	42	7,015
51	March.....	735	53,851	6,797	12.6	42	6,961
52	April.....	737	53,485	6,103	11.4	42	7,043
53	May.....	746	53,743	5,347	9.9	41	7,098
54	June.....	748	53,216	4,941	9.3	42	7,081
55	July.....	747	52,858	4,316	8.2	42	7,071
56	August.....	739	52,520	4,949	9.2	42	6,939
57	September.....	733	52,328	4,234	8.1	43	6,871
58	October.....	778	54,079	4,909	9.1	40	6,956
59	November.....	772	53,607	5,564	10.4	38	6,948
60	December.....	782	54,112	6,140	11.3	37	6,913
61	January, 1935.....	793	53,883	5,739	10.6	39	6,984
62	February.....	776	52,862	5,219	9.9	37	6,839
63	March.....	768	53,150	5,540	10.4	38	6,836
64	April.....	772	53,973	5,339	9.9	38	7,021
65	May.....	765	54,812	4,806	9.0	38	7,040
66	June.....	746	54,002	4,163	7.7	36	6,936
67	July.....	768	55,055	3,674	6.7	38	7,030
68	August.....	774	55,360	3,831	6.9	39	7,116
69	September.....	778	56,331	3,641	6.5	40	6,810
70	October.....	808	57,689	4,176	7.2	41	6,993
71	November.....	775	56,129	4,191	7.5	37	7,024
72	December.....	811	57,740	5,013	8.7	38	7,115

TABLE 14. Labour union figures on number of unions and members reporting and number and percentage unemployed, by industries and months, Canada, June 30, 1926-December 31, 1935—Con.

Communication		Lumbering and Logging				Retail Trade				Σ %
Unemployed		No. Reporting		Unemployed		No. Reporting		Unemployed		
No.	P.C.	Unions	Members	No.	P.C.	Unions	Members	No.	P.C.	
951	11-3	4	775	188	24-0	4	1,212	54	4-5	1
964	8-2	4	745	158	21-2	3	1,139	8	0-7	2
882	10-9	4	806	165	20-5	4	1,176	40	3-4	3
748	9-3	4	717	187	26-1	4	1,154	33	2-9	4
1,270	15-8	4	724	193	26-7	4	1,169	27	2-3	5
874	10-8	5	1,334	649	48-7	5	1,183	27	2-3	6
707	8-8	4	1,349	567	42-0	4	1,105	10	0-9	7
843	10-9	4	1,304	592	45-4	4	1,162	8	0-7	8
705	9-1	4	1,299	549	42-3	6	1,101	21	1-9	9
1,087	14-0	4	1,299	472	36-3	6	1,106	22	2-0	10
1,060	13-4	5	1,362	633	46-5	5	1,109	68	5-8	11
1,102	15-0	4	1,300	675	51-9	5	1,070	8	0-7	12
1,253	15-6	3	611	140	22-0	5	1,080	59	5-5	13
1,177	15-5	4	660	207	31-4	6	1,096	22	2-0	14
1,123	14-8	4	665	238	35-8	5	1,063	8	0-8	15
1,106	14-7	4	662	227	34-3	6	1,078	22	2-0	16
994	13-2	4	677	213	31-5	5	1,043	6	0-6	17
735	10-1	5	696	168	24-1	6	1,073	16	1-4	18
731	10-5	5	683	154	22-5	5	1,055	31	2-9	19
781	10-8	4	663	136	20-5	5	1,069	12	1-1	20
821	11-5	4	605	102	16-9	4	1,026	6	0-6	21
881	12-4	5	671	163	24-3	4	1,007	5	0-5	22
848	11-6	6	719	146	20-3	3	1,008	-	-	23
941	12-9	3	546	104	19-0	3	1,006	-	-	24
974	13-6	4	661	144	21-8	3	1,006	-	-	49
900	12-9	5	697	138	19-8	4	1,700	86	5-1	50
932	13-4	5	1,292	117	9-1	4	1,713	117	6-8	51
942	13-4	3	635	199	29-9	4	1,729	117	6-8	52
848	11-9	4	1,388	85	6-1	6	1,835	122	6-6	53
860	12-3	3	1,373	41	3-0	5	1,871	116	6-2	54
803	11-4	3	1,431	35	2-4	5	1,849	110	6-3	55
788	11-4	3	1,451	537	37-0	6	1,848	151	8-2	56
818	11-9	3	1,457	652	44-7	5	1,788	213	11-9	57
821	11-8	5	1,260	570	45-6	5	1,813	199	11-0	58
819	11-8	3	1,503	583	38-8	5	1,769	105	5-9	59
798	11-5	4	1,450	733	50-6	6	2,400	189	7-8	60
868	12-4	3	1,384	659	47-6	5	1,737	70	4-4	61
796	11-6	3	1,385	649	46-3	5	1,717	65	3-8	62
810	11-8	3	601	39	5-8	5	1,703	125	7-3	63
835	11-9	2	601	49	8-2	3	1,781	205	11-5	64
767	10-9	3	632	58	9-2	5	1,825	243	13-3	65
782	11-3	3	625	32	5-1	5	1,780	184	10-3	66
731	10-4	4	626	46	7-3	5	1,751	159	9-1	67
714	10-0	4	627	45	7-2	5	1,858	229	12-3	68
753	11-1	4	619	43	6-9	4	1,878	195	10-4	69
738	10-6	4	618	61	9-9	5	1,801	92	5-1	70
741	10-5	4	622	75	12-1	5	1,769	32	1-8	71
748	10-5	4	517	78	15-1	5	1,723	63	3-7	72

TABLE 14. Labour union figures on number of unions and members reporting and number and percentage unemployed, by industries and months, Canada, June 30, 1920-December 31, 1935—Con.

No.	Month	Public Employment				Fishing	
		No. Reporting		Unemployed		No. Reporting	
		Unions	Members	No.	P.C.	Unions	Members
1	January, 1932	72	8,410	174	2.1	2	1,062
2	February	71	7,873	497	6.3	1	505
3	March	72	8,504	474	5.5	1	505
4	April	74	8,667	484	5.6	1	505
5	May	71	8,417	798	9.5	1	505
6	June	72	7,799	306	5.1	2	655
7	July	71	7,788	365	4.7	2	705
8	August	68	7,300	386	5.3	2	705
9	September	71	7,292	519	7.1	2	705
10	October	73	7,816	358	5.3	2	705
11	November	73	7,749	436	5.6	2	705
12	December	73	7,359	464	6.3	2	705
13	January, 1933	78	7,562	679	9.0	2	730
14	February	75	7,449	557	7.5	3	755
15	March	77	7,671	564	7.4	2	730
16	April	73	7,325	443	6.0	2	750
17	May	69	6,385	329	5.2	2	705
18	June	72	6,791	423	6.2	2	1,205
19	July	73	6,739	420	6.2	2	705
20	August	73	6,505	313	4.8	2	705
21	September	69	6,454	333	5.2	2	705
22	October	74	6,917	112	1.6	2	705
23	November	75	6,766	216	3.2	2	685
24	December	74	6,898	193	2.8	2	680
25	January, 1934	75	7,050	149	2.1	2	705
26	February	77	7,202	300	4.2	2	705
27	March	71	6,898	188	2.7	2	745
28	April	73	6,807	114	1.7	1	225
29	May	70	6,954	129	1.8	1	230
30	June	74	7,422	225	3.0	1	235
31	July	76	7,558	272	3.6	1	210
32	August	79	7,088	270	3.4	1	225
33	September	77	8,055	256	3.2	1	225
34	October	78	7,845	185	2.4	3	297
35	November	74	7,433	86	1.2	2	270
36	December	78	7,481	288	3.8	3	694
37	January, 1935	77	7,530	124	1.6	3	722
38	February	79	7,457	157	2.1	3	758
39	March	74	7,550	150	2.0	4	567
40	April	72	7,364	125	1.7	2	485
41	May	75	7,600	148	1.9	3	558
42	June	77	7,759	218	2.8	3	569
43	July	76	7,916	244	3.1	3	585
44	August	80	8,229	247	3.0	3	552
45	September	77	8,104	233	2.9	4	599
46	October	76	8,208	219	2.7	2	525
47	November	74	8,045	159	2.0	4	611
48	December	75	8,223	264	3.2	4	560

TABLE 14. Labour union figures on number of unions and members reporting and number and percentage unemployed, by industries and months, Canada, June 30, 1920-December 31, 1935—Con.

Fishing		Miscellaneous										No.
		Total					Hotels and Restaurants					
		No. Reporting		Unemployed		No. Reporting		Unemployed				
No.	P.C.	Unions	Members	No.	P.C.	Unions	Members	No.	P.C.			
290	21-7	133	5,807	1,134	19-5	7	722	132	18-3			
-	-	132	5,746	1,181	20-6	7	750	165	22-0	2		
-	-	126	5,243	1,128	21-5	7	705	155	19-5	3		
-	-	125	5,370	1,119	20-8	7	692	147	21-2	4		
-	-	125	5,357	1,099	20-5	7	781	134	17-2	5		
50	7-6	125	4,890	1,067	21-2	5	528	93	17-6	6		
75	10-6	128	4,859	1,190	24-5	6	522	117	22-4	7		
40	5-7	124	4,530	1,047	23-1	5	460	101	22-0	8		
75	10-6	122	4,299	858	20-0	8	630	147	23-3	9		
150	21-3	118	4,357	905	20-8	5	459	116	25-3	10		
190	27-0	112	3,848	818	21-3	5	468	117	25-0	11		
200	28-4	112	4,025	805	20-0	5	455	66	14-5	12		
100	13-7	118	4,191	779	18-6	5	548	115	21-0	13		
100	13-2	112	3,955	890	22-5	4	418	141	33-7	14		
50	6-8	114	4,305	899	20-9	4	485	150	30-9	15		
15	2-0	112	4,159	867	20-8	6	551	158	28-7	16		
15	2-1	115	4,199	906	21-6	7	595	189	31-7	17		
15	1-2	111	4,184	976	23-4	5	580	192	33-1	18		
10	1-4	123	4,394	908	20-6	7	608	177	29-1	19		
150	21-3	120	4,079	839	19-7	7	562	122	21-7	20		
175	24-8	126	4,158	839	20-2	5	535	117	21-9	21		
175	24-8	117	4,104	706	17-2	5	549	101	18-4	22		
180	25-3	114	3,937	660	16-8	5	492	101	20-5	23		
170	25-0	109	3,690	729	19-8	6	575	112	19-4	24		
190	27-0	115	4,087	750	18-6	7	555	158	24-1	25		
15	2-1	111	3,819	708	18-5	6	599	148	24-7	26		
10	1-3	112	3,509	610	15-9	6	545	105	19-2	27		
5	2-2	111	3,542	540	15-2	5	482	74	16-0	28		
10	4-3	109	3,703	545	14-7	5	475	54	11-4	29		
5	2-2	110	3,849	574	14-9	6	590	75	12-7	30		
4	1-9	114	3,685	648	17-5	5	508	97	19-1	31		
150	66-7	114	3,812	641	16-8	5	503	36	7-2	32		
100	44-4	109	3,626	529	14-0	6	537	42	7-8	33		
215	72-4	114	3,701	561	15-2	6	610	111	21-8	34		
223	83-3	112	3,601	567	15-4	3	400	84	21-0	35		
618	88-8	116	3,905	601	15-4	6	442	80	18-1	36		
563	91-8	114	3,742	585	15-6	5	473	87	18-4	37		
671	88-5	113	3,784	605	16-0	5	478	96	20-1	38		
354	64-2	115	3,787	582	15-4	5	481	86	17-9	39		
230	47-4	122	3,829	598	15-9	5	475	88	18-5	40		
19	3-4	127	4,190	534	15-1	5	455	84	18-5	41		
7	1-2	115	4,115	604	14-7	3	384	75	19-5	42		
5	0-9	126	4,514	579	12-8	2	298	50	15-9	43		
-	-	119	4,598	1,011	22-0	2	300	72	24-0	44		
100	16-7	124	5,080	985	19-4	4	457	92	19-7	45		
150	28-5	125	5,091	554	10-9	6	588	138	23-5	46		
193	31-9	129	5,388	578	10-6	7	718	156	21-8	47		
204	35-9	128	5,011	522	10-4	5	485	91	18-8	48		

TABLE 14. Labour union figures on number of unions and members reporting and number and percentage unemployed, by industries and months, Canada, June 30, 1920-December 31, 1935—Con.

No.	Month	Miscellaneous					
		Barbers				Musicians and Theatre Employees	
		No. Reporting		Unemployed		No. Reporting	
		Unions	Members	No.	P.C.	Unions	Members
1	January, 1932.....	30	1,156	52	4.5	35	852
2	February.....	29	1,116	60	5.4	31	822
3	March.....	29	1,066	39	3.7	32	813
4	April.....	26	968	32	3.3	32	862
5	May.....	26	971	31	3.2	32	793
6	June.....	29	1,100	41	3.7	31	757
7	July.....	26	927	31	3.3	36	870
8	August.....	24	833	32	3.8	34	818
9	September.....	27	860	15	1.7	29	724
10	October.....	27	1,035	24	2.3	33	876
11	November.....	24	769	19	2.5	32	772
12	December.....	26	797	19	2.4	32	828
13	January, 1933.....	25	775	21	2.7	34	869
14	February.....	23	763	13	1.7	33	850
15	March.....	25	813	29	3.6	34	951
16	April.....	22	796	21	2.6	33	778
17	May.....	23	757	25	3.3	30	700
18	June.....	23	681	30	4.3	33	806
19	July.....	23	685	11	1.6	36	866
20	August.....	23	719	17	2.4	36	835
21	September.....	23	715	25	3.5	41	947
22	October.....	22	654	13	2.3	37	940
23	November.....	23	690	16	2.3	36	880
24	December.....	21	631	11	1.7	34	777
25	January, 1934.....	21	652	17	2.6	34	853
26	February.....	24	712	34	4.8	35	799
27	March.....	23	646	20	3.1	36	771
28	April.....	23	666	17	2.6	35	751
29	May.....	23	713	19	2.7	33	720
30	June.....	21	618	16	2.6	35	748
31	July.....	21	600	13	2.2	36	803
32	August.....	21	614	18	2.9	37	824
33	September.....	21	591	16	2.7	34	727
34	October.....	19	594	19	3.2	34	707
35	November.....	21	605	17	2.8	36	853
36	December.....	18	529	6	1.1	35	926
37	January, 1935.....	21	535	37	6.9	34	926
38	February.....	21	619	28	4.5	36	901
39	March.....	30	563	27	4.8	35	881
40	April.....	21	568	21	3.5	36	803
41	May.....	20	580	16	2.8	36	916
42	June.....	23	875	28	3.0	33	855
43	July.....	24	976	36	3.7	38	924
44	August.....	24	1,302	537	41.2	35	785
45	September.....	23	1,192	506	42.4	36	796
46	October.....	24	1,223	52	4.3	35	868
47	November.....	26	1,312	33	2.5	37	911
48	December.....	23	1,241	32	2.6	37	931

TABLE 14. Labour union figures on number of unions and members reporting and number and percentage unemployed, by industries and months, Canada, June 30, 1920-December 31, 1935—Con.

Miscellaneous											No.
Musicians and Theatre Employees		Stationary Engineers and Firemen				Others					
Unemployed		No. Reporting		Unemployed		No. Reporting		Unemployed			
No.	P.C.	Unions	Members	No.	P.C.	Unions	Members	No.	P.C.		
123	14-4	52	2,639	765	29-0	9	438	62	14-2	1	
141	17-2	55	2,591	782	30-2	10	467	33	7-1	2	
142	17-5	48	2,084	751	36-0	10	455	41	8-5	3	
138	16-0	50	2,348	754	32-1	11	502	48	9-6	4	
164	20-7	51	2,344	734	31-3	9	468	36	7-7	5	
185	24-4	48	2,128	708	33-3	11	467	30	6-4	6	
185	21-3	47	2,056	822	40-0	11	484	35	7-2	7	
194	23-9	49	1,925	686	35-0	12	499	34	6-8	8	
143	19-8	47	1,605	509	31-7	11	480	44	9-2	9	
158	18-0	45	1,635	582	35-0	8	352	26	7-4	10	
162	21-0	42	1,456	503	34-5	9	383	17	4-4	11	
164	19-8	40	1,554	496	31-9	9	391	60	15-3	12	
179	20-6	43	1,672	436	27-7	11	427	28	6-6	13	
194	22-8	43	1,516	516	34-0	9	408	26	6-4	14	
235	24-7	34	1,577	428	27-1	12	478	57	11-9	15	
191	24-6	42	1,675	471	28-1	9	359	26	7-2	16	
175	25-0	45	1,703	471	27-7	10	443	46	10-4	17	
195	24-2	41	1,710	525	30-7	8	377	37	9-0	18	
244	28-2	44	1,747	436	25-0	13	488	37	7-6	19	
233	27-9	42	1,493	390	26-1	12	470	43	9-1	20	
237	25-0	45	1,488	408	27-4	12	473	52	11-0	21	
197	21-0	37	1,484	351	23-7	16	477	42	8-8	22	
167	19-0	39	1,476	354	24-0	11	399	22	5-5	23	
184	23-7	38	1,345	411	30-6	10	361	11	3-0	24	
157	18-4	42	1,523	396	26-0	11	404	31	7-7	25	
167	20-9	37	1,393	347	24-9	9	335	12	3-6	26	
162	21-0	38	1,275	315	24-7	9	371	8	2-2	27	
129	17-2	38	1,308	299	22-9	10	355	21	5-9	28	
137	19-0	37	1,383	316	22-8	11	412	19	4-6	29	
135	18-0	41	1,451	329	22-5	13	442	22	5-0	30	
204	25-4	41	1,413	319	22-5	11	361	16	4-4	31	
199	24-2	40	1,448	366	25-3	11	423	22	5-2	32	
125	17-2	36	1,352	325	24-0	12	419	21	5-0	33	
114	16-1	42	1,447	309	20-7	13	443	17	3-8	34	
194	23-3	42	1,470	270	18-4	10	383	2	0-5	35	
170	18-4	46	1,582	318	20-1	12	426	27	6-3	36	
167	17-0	45	1,477	293	19-8	9	331	11	3-3	37	
185	20-5	40	1,447	289	19-8	10	339	10	2-9	38	
159	18-0	45	1,490	290	19-5	11	372	20	5-4	39	
171	21-3	48	1,572	317	20-2	12	380	11	2-9	40	
190	20-7	51	1,661	327	19-7	15	578	17	2-9	41	
202	23-0	42	1,521	289	19-0	14	480	12	2-5	42	
236	26-6	46	1,681	256	16-2	16	737	1	0-1	43	
157	20-0	42	1,497	232	15-5	16	714	13	1-8	44	
136	17-1	43	1,554	223	14-4	18	1,071	28	2-6	45	
133	15-3	45	1,555	222	14-3	15	857	9	1-1	46	
128	14-1	42	1,531	241	15-7	17	918	15	1-6	47	
153	16-4	44	1,524	224	14-7	17	830	22	2-7	48	

TABLE 15. Data on labour unions in the manufacturing, transportation and building and construction industries compared with the Bureau's index of number employed in these three industries and with the index of final estimated percentage employed for all industries, by months, June 30, 1920-December 31, 1935

Month	Manufacturing, Transportation and Building and Construction							All Industries	
	No. Reporting		Unemployed		P.C. Employed	Index of P.C. Employed (base 1926)	Bureau's Index of No. Employed		Index Estimated P.C. Employed (base 1926)
	Unions	Members	No.	P.C.					
June, 1920.....	1,297	162,053	4,448	2.74	97.20	102.8	-	102.3	
July.....	1,210	155,584	4,599	2.95	97.05	102.6	-	101.0	
August.....	1,227	156,091	5,678	3.64	96.39	101.9	-	100.6	
September.....	1,220	158,730	5,900	3.73	96.28	101.8	-	101.8	
October.....	1,263	167,815	8,642	5.15	94.85	100.3	-	104.2	
November.....	1,242	166,768	14,502	8.70	91.30	96.5	-	100.6	
December.....	1,289	163,411	25,816	15.80	84.20	89.0	84.2	96.1	
January, 1921....	1,250	156,196	23,211	14.86	85.14	90.0	88.2	94.9	
February.....	1,217	149,875	22,019	14.69	85.31	90.2	86.3	92.3	
March.....	1,264	154,825	24,024	15.54	84.46	89.3	83.0	94.1	
April.....	1,301	150,537	24,930	16.56	83.44	88.2	82.9	94.3	
May.....	1,314	150,711	23,913	15.87	84.13	88.9	85.8	95.2	
June.....	1,174	135,491	17,549	12.95	87.05	92.0	87.1	93.9	
July.....	1,228	138,517	12,376	8.93	91.07	95.3	88.8	98.7	
August.....	1,285	147,433	13,767	9.34	90.66	95.8	87.9	100.8	
September.....	1,278	142,088	12,856	9.05	90.95	96.1	89.7	100.2	
October.....	1,233	132,580	10,364	7.82	92.18	97.4	89.9	99.7	
November.....	1,135	113,545	13,860	12.21	87.79	92.8	85.7	95.8	
December.....	1,213	123,265	20,741	16.83	83.17	87.9	74.9	89.2	
January, 1922....	1,217	125,040	18,440	14.75	85.25	90.1	76.7	90.3	
February.....	1,213	127,098	13,991	11.01	88.99	94.1	81.0	95.0	
March.....	1,174	123,035	12,433	10.06	89.97	95.1	80.8	94.9	
April.....	1,103	106,423	9,977	9.40	90.54	95.7	83.2	93.8	
May.....	1,123	117,491	11,105	9.45	90.55	95.7	80.5	95.7	
June.....	1,147	115,399	6,126	5.31	94.62	100.1	92.9	96.4	
July.....	1,218	125,233	5,574	4.45	95.55	101.0	95.5	100.7	
August.....	1,156	111,960	4,274	3.82	96.18	101.7	95.7	101.0	
September.....	1,160	123,248	3,658	2.97	97.03	102.6	96.3	102.1	
October.....	1,156	118,926	4,758	4.00	96.00	101.5	96.2	100.8	
November.....	1,120	111,415	7,476	6.71	93.29	98.6	94.1	98.3	
December.....	1,166	117,128	8,101	6.92	93.08	98.4	83.2	98.2	
January, 1923....	1,078	106,400	8,527	8.01	91.99	97.2	87.2	96.5	
February.....	1,124	115,068	8,842	7.68	92.32	97.6	88.6	98.1	
March.....	1,106	111,994	7,615	6.80	93.20	98.5	87.4	97.7	
April.....	1,069	111,769	5,027	4.50	95.50	101.0	92.6	100.0	
May.....	1,120	118,958	6,176	5.19	94.81	100.2	90.9	100.2	
June.....	1,143	118,741	4,259	3.59	96.41	101.9	101.9	101.4	
July.....	1,159	119,703	3,579	2.99	97.01	102.6	103.2	101.9	
August.....	1,130	115,784	2,777	2.40	97.60	103.2	102.6	102.6	
September.....	1,158	115,167	2,544	2.21	97.79	103.4	101.4	102.8	
October.....	1,136	118,854	6,647	5.59	94.41	99.8	100.0	99.9	
November.....	1,140	116,827	8,638	7.39	92.61	97.9	94.6	98.4	
December.....	1,204	124,549	10,106	8.11	91.89	97.1	85.4	97.5	
January, 1924....	1,196	121,990	10,326	8.46	91.54	96.8	88.1	97.2	
February.....	1,163	119,011	10,400	8.74	91.26	96.5	88.7	96.9	
March.....	1,134	116,164	9,239	7.95	92.05	97.3	89.1	97.9	
April.....	1,137	118,720	7,408	6.24	93.70	99.1	91.7	99.7	
May.....	1,138	122,673	11,050	9.01	90.99	96.2	95.9	97.4	
June.....	1,181	121,054	8,235	6.80	93.20	98.5	97.5	99.0	
July.....	1,169	119,720	7,887	6.59	93.41	98.7	96.4	99.4	
August.....	1,163	118,762	8,778	7.39	92.61	97.9	94.0	98.2	
September.....	1,198	118,650	7,905	6.74	93.26	98.6	94.5	98.8	
October.....	1,177	116,123	8,629	7.43	92.57	97.9	92.2	97.8	
November.....	1,181	118,238	12,090	10.23	89.27	94.4	88.3	94.9	
December.....	1,210	120,802	17,069	14.13	85.87	90.8	80.1	92.9	
January, 1925....	1,269	122,849	14,507	11.81	89.19	93.2	83.3	94.3	
February.....	1,303	126,236	12,970	10.27	89.73	94.9	86.0	95.2	
March.....	1,218	116,800	11,319	9.69	90.31	95.5	87.0	96.0	
April.....	1,173	116,862	11,137	9.53	90.47	95.6	91.3	95.8	
May.....	1,155	115,419	8,584	7.44	92.56	97.8	95.7	97.6	
June.....	1,203	118,509	7,756	6.54	93.46	98.8	99.0	98.5	
July.....	1,206	119,363	6,589	5.52	94.48	99.9	98.3	99.5	
August.....	1,176	118,575	5,882	4.96	95.04	100.5	98.7	100.3	
September.....	1,180	115,458	7,432	6.44	93.56	98.9	100.1	98.9	
October.....	1,184	112,901	6,621	5.86	94.14	99.5	97.3	99.5	
November.....	1,210	113,811	7,462	6.56	93.44	98.8	94.1	98.8	
December.....	1,237	114,988	10,815	9.41	90.50	95.8	87.6	96.5	

TABLE 15. Data on labour unions in the manufacturing, transportation and building and construction industries compared with the Bureau's index of number employed in these three industries and with the index of final estimated percentage employed for all industries, by months, June 30, 1920-December 31, 1935—Con.

Month	Manufacturing, Transportation and Building and Construction							All Industries
	No. Reporting		Unemployed		P.C. Employed	Index of P.C. Employed (base 1925)	Bureau's Index of No. Employed	Index Estimated P.C. Employed (base 1925)
	Unions	Members	No.	P.C.				
January, 1926....	1,215	110,235	9,705	8.80	91.20	96.4	88.9	95.3
February.....	1,225	109,067	8,189	7.51	92.49	97.8	90.7	96.3
March.....	1,219	110,858	7,629	6.88	93.12	98.4	92.5	97.3
April.....	1,169	111,953	7,815	6.98	93.02	98.3	96.0	97.3
May.....	1,208	109,640	6,000	5.47	94.53	99.9	103.3	99.8
June.....	1,168	109,148	5,168	4.73	95.27	100.7	106.9	100.5
July.....	1,158	104,517	2,449	2.34	97.55	103.2	107.9	102.3
August.....	1,169	101,729	2,348	2.80	97.20	102.8	108.5	102.2
September.....	1,202	107,577	4,313	4.01	95.99	101.5	108.0	102.4
October.....	1,222	111,500	2,527	2.16	96.84	102.4	104.2	103.8
November.....	1,191	112,439	5,385	4.79	95.21	100.6	100.1	101.0
December.....	1,235	115,240	7,972	6.92	93.05	98.4	92.5	101.0
January, 1927....	1,220	115,187	9,068	7.87	92.13	97.4	93.7	99.1
February.....	1,248	117,484	9,471	8.09	91.94	97.2	95.4	100.6
March.....	1,197	117,221	7,038	6.00	94.00	99.4	96.8	100.2
April.....	1,223	119,000	8,204	6.84	93.16	98.5	102.3	101.2
May.....	1,232	120,530	6,950	6.77	94.25	99.6	108.4	101.5
June.....	1,230	124,795	4,568	3.68	96.34	101.8	111.8	104.0
July.....	1,234	124,245	5,172	4.15	95.84	101.3	112.5	103.7
August.....	1,255	125,016	5,509	4.41	95.59	101.0	112.5	103.4
September.....	1,260	126,599	4,966	3.92	96.09	101.6	110.9	104.1
October.....	1,288	124,904	5,850	4.76	95.24	100.7	107.3	103.3
November.....	1,253	125,542	7,945	6.33	93.67	99.0	104.2	101.3
December.....	1,348	132,569	10,655	8.04	91.96	97.2	95.7	101.2
January, 1928....	1,299	129,351	10,913	8.44	91.55	95.8	98.2	100.1
February.....	1,320	130,922	10,598	8.11	91.89	97.1	99.4	100.1
March.....	1,347	135,048	9,543	7.14	92.85	98.2	101.5	101.3
April.....	1,294	135,282	7,242	5.31	94.59	100.1	107.0	102.6
May.....	1,329	133,950	5,075	3.79	96.21	101.7	115.1	103.5
June.....	1,328	135,555	5,035	3.68	95.32	101.8	119.8	103.0
July.....	1,324	136,908	3,445	2.52	97.48	103.0	123.8	103.8
August.....	1,322	137,797	3,677	2.67	97.33	102.9	123.0	103.8
September.....	1,341	138,958	3,187	2.29	97.71	103.3	121.1	103.8
October.....	1,379	142,300	5,072	3.59	96.44	101.9	119.6	102.9
November.....	1,389	143,158	7,011	4.90	95.10	100.5	113.2	101.9
December.....	1,404	146,205	11,092	7.59	92.41	97.7	104.1	99.8
January, 1929....	1,414	145,202	11,054	7.61	92.39	97.7	104.9	99.4
February.....	1,388	143,830	11,215	7.80	92.20	97.5	108.3	98.6
March.....	1,436	150,378	9,922	6.50	93.40	98.7	109.8	100.1
April.....	1,383	146,582	8,540	5.83	94.17	99.5	115.8	99.4
May.....	1,363	151,515	5,579	4.34	95.55	101.1	123.2	101.5
June.....	1,398	154,241	4,515	2.99	97.01	102.6	125.9	103.1
July.....	1,397	155,894	5,432	3.48	96.52	102.0	129.9	103.0
August.....	1,410	160,582	5,858	3.65	95.35	101.9	127.9	103.0
September.....	1,459	163,486	6,805	4.16	95.84	101.3	125.1	103.0
October.....	1,456	165,280	11,788	7.13	92.67	98.2	121.7	101.4
November.....	1,473	166,155	18,079	10.88	89.12	94.2	112.9	97.8
December.....	1,500	155,863	22,421	13.52	85.48	91.4	103.8	95.5
January, 1930....	1,479	163,916	20,252	12.35	87.64	92.6	105.2	93.2
February.....	1,475	162,681	21,308	13.11	85.89	91.9	104.9	91.8
March.....	1,473	163,548	19,324	11.82	88.15	93.2	105.9	93.1
April.....	1,435	160,055	15,597	9.74	90.25	95.4	111.0	93.7
May.....	1,403	164,996	18,036	11.64	88.35	93.4	115.9	90.3
June.....	1,411	168,707	19,272	12.14	87.85	92.9	119.0	90.8
July.....	1,397	157,251	16,049	10.21	89.79	94.9	119.8	92.0
August.....	1,363	154,509	16,086	10.41	89.59	94.7	117.1	91.1
September.....	1,459	161,424	17,291	10.71	89.29	94.4	115.9	89.4
October.....	1,491	168,687	20,584	12.58	87.42	92.4	111.0	82.4
November.....	1,491	160,636	25,960	16.23	83.77	88.6	104.8	83.3
December.....	1,584	159,968	33,347	19.62	80.38	85.0	96.7	88.0
January, 1931....	1,549	161,199	29,179	18.10	81.90	86.6	97.0	87.5
February.....	1,532	158,453	28,079	17.72	82.28	87.0	97.4	87.4
March.....	1,522	161,675	27,272	16.87	83.13	87.9	98.3	88.2
April.....	1,606	160,886	26,175	16.27	83.73	88.5	101.0	88.9
May.....	1,504	155,539	27,845	17.90	82.10	86.8	102.8	87.1
June.....	1,541	156,407	28,351	18.13	81.87	86.5	103.5	87.1
July.....	1,547	155,711	26,820	17.22	82.78	87.5	105.8	87.6
August.....	1,536	152,895	25,741	16.84	83.16	87.9	108.0	88.0
September.....	1,536	149,673	31,575	21.10	78.90	83.4	103.7	87.1
October.....	1,549	148,300	31,844	21.47	78.53	83.0	101.9	85.7
November.....	1,515	148,020	30,914	21.52	78.58	83.2	96.4	84.1
December.....	1,591	143,304	35,237	24.59	75.41	79.7	87.5	80.6

TABLE 15. Data on labour unions in the manufacturing, transportation and building and construction industries compared with the Bureau's index of number employed in these three industries and with the index of final estimated percentage employed for all industries, by months, June 30, 1920-December 31, 1935—Con.

Month	Manufacturing, Transportation and Building and Construction							All Industries
	No. Reporting		Unemployed		P.C. Employed	Index of P.C. Employed (base 1926)	Bureau's Index of No. Employed	Index Estimated P.C. Employed (base 1926)
	Unions	Members	No.	P.C.				
January, 1932.....	1,539	142,544	36,185	25.39	74.61	78.9	86.2	79.4
February.....	1,511	139,486	33,883	24.29	75.71	80.0	85.6	79.2
March.....	1,528	138,715	32,459	23.49	76.60	81.0	85.3	78.7
April.....	1,504	136,487	36,061	26.42	73.58	77.9	85.2	78.0
May.....	1,506	134,237	32,884	24.50	75.50	79.8	87.0	78.6
June.....	1,494	134,116	33,235	24.78	75.22	79.5	86.7	78.6
July.....	1,509	131,868	32,574	24.70	75.30	79.6	84.2	77.5
August.....	1,474	126,064	30,298	24.03	75.97	80.3	83.9	77.4
September.....	1,442	124,634	28,560	22.92	77.08	81.5	84.0	77.0
October.....	1,474	125,747	30,847	24.53	75.47	79.8	81.5	76.8
November.....	1,510	124,614	32,623	26.18	73.82	78.0	78.9	76.0
December.....	1,489	119,828	35,190	29.37	70.63	74.7	72.6	73.6
January, 1933.....	1,511	121,456	35,768	29.45	70.55	74.6	72.0	73.0
February.....	1,475	116,182	32,680	28.14	71.86	76.0	72.5	73.1
March.....	1,445	117,183	33,008	28.17	71.83	75.9	72.4	73.0
April.....	1,423	118,212	32,597	27.58	72.42	76.6	74.6	73.8
May.....	1,416	114,489	29,943	26.15	73.85	78.1	77.9	75.1
June.....	1,408	115,792	28,507	24.62	75.38	79.7	81.8	77.2
July.....	1,412	116,832	27,894	23.88	76.12	80.5	85.1	78.6
August.....	1,407	115,595	25,884	22.39	77.61	82.0	86.4	79.1
September.....	1,401	113,834	25,715	22.59	77.41	81.8	87.7	80.3
October.....	1,440	113,849	26,220	23.03	76.97	81.4	87.0	80.7
November.....	1,427	112,281	26,947	23.90	76.86	81.2	85.3	80.7
December.....	1,442	112,982	27,739	24.55	75.45	79.8	80.7	79.0
January, 1934.....	1,436	114,208	28,333	24.81	75.19	79.5	85.1	80.2
February.....	1,442	112,452	26,231	23.33	76.67	81.0	87.4	81.2
March.....	1,383	111,888	24,654	22.07	77.93	82.4	87.4	80.5
April.....	1,410	116,649	24,117	20.67	79.33	83.9	80.2	81.2
May.....	1,419	118,037	23,929	19.93	80.07	84.6	94.9	83.5
June.....	1,407	120,324	23,267	19.34	80.66	85.3	90.6	85.8
July.....	1,406	116,906	22,555	19.29	80.71	85.3	98.1	85.2
August.....	1,404	119,482	21,228	17.77	82.23	86.9	96.4	84.9
September.....	1,410	119,740	21,536	17.99	82.01	86.7	96.6	85.4
October.....	1,467	122,405	22,652	18.51	81.49	86.1	94.3	86.6
November.....	1,447	119,812	24,424	20.39	79.61	84.2	90.9	84.5
December.....	1,470	120,740	25,633	20.73	79.27	83.8	85.7	82.1
January, 1935.....	1,486	121,658	24,997	20.55	79.45	84.0	87.4	82.0
February.....	1,438	122,674	24,716	20.15	79.85	84.4	90.3	82.8
March.....	1,444	122,375	22,773	18.61	81.39	86.0	88.9	81.6
April.....	1,441	123,934	22,978	18.54	81.46	86.1	91.4	82.4
May.....	1,450	125,751	21,588	17.17	82.83	87.6	94.0	83.7
June.....	1,393	122,763	20,023	16.31	83.69	88.5	96.4	84.7
July.....	1,417	124,220	19,708	15.87	84.13	88.0	98.3	85.5
August.....	1,425	126,075	18,877	14.97	85.03	89.9	100.0	86.6
September.....	1,460	127,281	17,888	14.05	85.95	90.9	102.8	88.5
October.....	1,472	130,298	19,940	15.30	84.70	89.5	103.0	89.3
November.....	1,455	129,844	19,873	15.31	84.69	89.5	97.7	87.7
December.....	1,500	130,163	21,885	16.81	83.19	87.9	90.2	84.6

TABLE 16. Population, male wage-earners, number and percentage not at work June 1, 1931 and number of industrial establishments according to Bradstreet's in 138 urban centres having 161-300 male wage-earners, June 1, 1931

City, Town or Village	Population	Male Wage-Earners 20 Years and over	Not at Work June 1		No. Industrial Establishments
			No.	P.C.	
Souris, P.E.I.	1,063	184	24	13.04	34
Antigonish, N.S.	1,764	273	24	8.79	75
Bridgetown, N.S.	1,126	171	5	3.51	63
Canso, N.S.	1,575	240	55	22.92	44
Digby, N.S.	1,412	278	5	1.82	79
Joggins, N.S.	1,000	231	124	53.68	18
Mahone Bay, N.S.	1,065	216	74	34.26	61
Oxford, N.S.	1,133	210	60	27.78	49
Port Hawkesbury, N.S.	1,011	189	63	33.33	29
Grand Falls, N.B.	1,556	222	42	18.92	77
St. Andrews, N.B.	1,207	270	7	2.59	43
St. George, N.B.	1,087	215	27	12.50	32
Sheddie, N.B.	1,883	278	43	15.47	40
Acton Vale, Que.	1,753	284	18	6.34	50
Arthabaska, Que.	1,608	172	9	5.23	33
Baie-de-Shawinigan, Que.	1,316	264	70	26.52	7
Baie-St-Paul, Que.	2,915	259	46	17.76	58
Bedford, Que.	1,570	270	17	6.30	53
Beebe Plain, Que.	1,053	244	34	13.93	32
Beloil, Que.	1,434	241	34	14.11	38
Cap Chat, Que.	1,139	173	67	38.73	37
Caussepeal, Que.	1,306	261	33	12.64	51
Chambly-Bassin, Que.	1,287	205	20	9.76	33
Charlesbourg, Que.	1,869	240	10	6.67	27
Châteauguay, Que.	1,067	223	27	12.11	19
Danville, Que.	1,354	252	50	19.84	50
Deschambault, Que.	1,680	230	24	10.43	43
Disraeli, Que.	1,437	204	63	30.88	51
Dorion (Vaudreuil Station), Que.	1,155	351	15	5.88	28
Fort Coulonge, Que.	1,130	251	17	30.08	32
L'Abord-a-Pouffe, Que.	1,227	259	12	4.63	18
La Providence, Que.	1,241	212	8	3.31	14
L'Assomption, Que.	1,576	245	30	13.99	44
Laurentides, Que.	1,284	181	30	16.57	44
Laval-des-Rapides, Que.	2,716	263	55	20.91	8
L'Enfant-Jésus, Que.	4,066	101	60	37.27	33
Marieville, Que.	1,986	282	48	17.02	58
Montreal S., Que.	1,164	270	24	8.89	17
Pierreville, Que.	1,352	207	39	18.84	36
Port-Rouge, Que.	1,353	193	7	3.63	36
Rawdon, Que.	1,066	204	53	25.98	41
St-Alexis-de-la-Grand-Baie, Que.	1,790	282	146	51.77	41
St-Benoît-Joseph-Labre, Que.	1,648	232	109	46.98	18
St-Casimir, Que.	1,316	162	63	38.89	69
St-Eustache, Que.	1,187	210	15	7.14	61
St-Félicien, Que.	1,599	190	56	28.57	70
St-Gabriel-de-Brandon, Que.	1,530	228	51	22.37	58
St-Georges E., Que.	1,543	164	24	14.63	89
St-Jacques, Que.	1,529	194	43	22.16	45
St-Jérôme, Que.	1,235	171	69	40.35	50
St-Joseph (Beauport), Que.	1,625	183	34	18.58	54
St-Joseph-de-la-Rivière-Blanche, Que.	1,111	191	22	11.52	44
St-Marie, Que.	1,508	198	30	15.15	81
St-Pascale, Que.	1,235	178	26	14.61	39
St-Raymond, Que.	1,772	286	36	12.59	65
St-Rémi, Que.	1,201	161	13	8.07	49
Ste-Rose, Que.	1,661	275	40	14.45	41
Stotestown, Que.	1,189	245	43	17.48	24
Thurso, Que.	1,292	250	27	10.42	30
Trois-Pistoles, Que.	1,837	187	61	32.62	86
Val-Brillant, Que.	1,032	166	103	62.05	39
Alliston, Ont.	1,355	194	12	6.19	69
Beamsville, Ont.	1,203	229	48	20.98	45
Cashe Bay, Ont.	1,161	266	47	17.67	8
Caledonia, Ont.	1,396	282	45	15.96	54
Clinton, Ont.	1,780	287	46	16.03	87
Delhi, Ont.	1,121	199	38	19.10	58
Deseronto, Ont.	1,476	268	90	33.58	50
Dresden, Ont.	1,529	260	68	25.56	72
Elora, Ont.	1,195	272	55	20.22	44
Englehart, Ont.	1,210	275	16	5.82	41
Exeter, Ont.	1,668	268	23	8.58	75
Forest, Ont.	1,480	238	7	2.94	76
Harriston, Ont.	1,296	236	19	8.05	62
Havelock, Ont.	1,173	252	66	26.19	36
Kemptville, Ont.	1,280	230	48	20.87	56
Lakefield, Ont.	1,332	277	62	22.38	42
Little Current, Ont.	1,101	246	70	28.46	31
Madoc, Ont.	1,059	181	31	17.13	56
Mattawa, Ont.	1,631	290	122	42.07	46
Mitchell, Ont.	1,588	232	45	19.40	63
Morrisburg, Ont.	1,420	268	44	16.42	79
Mount Forest, Ont.	1,801	276	27	9.78	94

TABLE 16. Population, male wage-earners, number and percentage not at work June 1, 1931 and number of industrial establishments according to Bradstreet's in 138 urban centres having 161-300 male wage-earners, June 1, 1931—Con.

City, Town or Village	Population	Male Wage-Earners 20 Years and over	Not at Work June 1		No. Industrial Establishments
			No.	P.C.	
New Hamburg, Ont.	1,436	262	56	21.37	51
Niagara, Ont.	1,228	235	44	18.72	45
Norwich, Ont.	1,158	182	23	12.64	53
Port Elgin, Ont.	1,305	263	22	8.37	57
Portsmouth, Ont.	2,741	240	41	17.08	13
Richmond Hill, Ont.	1,295	245	31	12.65	51
Seaford, Ont.	1,080	258	31	12.02	87
Southampton, Ont.	1,489	193	51	17.41	54
Tavistock, Ont.	1,029	180	20	11.11	40
Tweed, Ont.	1,271	211	41	19.43	56
Uxbridge, Ont.	1,325	170	38	22.35	62
Vankleek Hill, Ont.	1,380	192	26	13.54	49
Victoria Harbour, Ont.	1,128	263	36	13.69	17
Waterford, Ont.	1,213	197	22	11.17	47
Winchester, Ont.	1,027	179	13	7.26	51
Beauséjour, Man.	1,139	193	83	43.01	37
Carman, Man.	1,418	220	46	21.32	57
Killarney, Man.	1,003	165	32	19.30	44
Morden, Man.	1,416	232	12	5.17	57
Stonewall, Man.	1,031	173	56	32.37	34
Virton, Man.	1,590	288	75	26.04	58
Assiniboia, Sask.	1,454	271	57	21.03	69
Battleford, Sask.	1,099	191	70	36.65	30
Canora, Sask.	1,179	175	59	33.71	45
Gravelbourg, Sask.	1,137	172	42	24.42	59
Indian Head, Sask.	1,438	238	74	31.09	59
Kindersley, Sask.	1,037	214	26	12.15	42
Lloydminster, Sask.	1,516	198	46	23.47	80
Maple Creek, Sask.	1,154	199	53	26.65	45
Moosomin, Sask.	1,119	180	25	13.89	35
Radville, Sask.	1,005	205	46	22.44	35
Rosthern, Sask.	1,412	242	79	32.64	44
Sutherland, Sask.	1,148	285	24	8.42	13
Tisdale, Sask.	1,069	188	18	9.57	51
Watrous, Sask.	1,303	193	85	29.01	53
Wilkie, Sask.	1,222	270	57	21.11	50
Wynyard, Sask.	1,042	177	36	20.34	34
Beverley, Alta.	1,111	254	105	41.34	5
Cardston, Alta.	1,672	230	57	24.78	55
Clareholm, Alta.	1,156	173	33	19.08	55
High River, Alta.	1,459	297	106	35.69	60
Innisfail, Alta.	1,024	169	54	31.95	52
Lacombe, Alta.	1,259	264	64	24.24	51
Macleod, Alta.	1,447	230	54	19.29	60
Olde, Alta.	1,056	193	52	26.04	53
Pincher Creek, Alta.	1,024	169	32	18.63	47
Raymond, Alta.	1,849	240	86	34.64	36
Stettler, Alta.	1,219	271	69	25.46	66
Taber, Alta.	1,279	231	89	38.53	47
Vegreville, Alta.	1,559	262	88	30.14	70
Vermilion, Alta.	1,270	269	61	23.46	53
Wainwright, Alta.	1,147	258	59	23.41	43
Courteney, B.C.	1,219	208	25	12.02	82
Grand Forks, B.C.	1,268	284	63	22.89	49
Mission, B.C.	1,314	283	81	28.62	81
Total	188,330	31,679	6,358	20.07	6,085

TABLE 17. Gainfully occupied, classified according to occupation, industrial status and sex, Canada, 1931

Occupation	Males					Females				
	Total	Em- ployer	Own Account	No Pay	Wage- Earner	Total	Em- ployer	Own Account	No Pay	Wage- Earner
All occupations.....	3,261,371	387,886	549,721	301,504	2,022,260	665,859	18,006	54,781	44,335	547,837
Agriculture.....	1,107,766	289,880	336,230	281,188	200,468	24,079	14,499	4,697	3,214	1,669
Agricultural machine owners.....	462	149	313	-	-	-	-	-	-	-
Apiculturists.....	615	96	519	-	-	31	4	17	-	-
Farmers and stock raisers.....	614,209	286,285	328,014	-	-	18,869	14,370	4,499	-	-
Gardeners, florists, and nursery-men.....	10,714	3,349	7,365	-	-	298	125	173	-	-
Foremen and overseers.....	3,022	-	-	154	2,868	29	-	-	2	27
Farm labourers.....	478,632	-	-	281,032	197,600	4,854	-	-	3,212	1,642
Fishing, Hunting, and Trapping.....	47,406	1,985	32,635	2,409	10,370	497	10	429	10	42
Fishermen.....	33,820	1,501	21,395	1,815	8,819	136	14	79	4	39
Hunters, trappers, and guides.....	13,788	394	11,240	594	1,800	361	2	359	6	3
Logging.....	43,995	1,636	589	290	41,489	-	-	-	-	-
Owners and managers.....	2,463	1,636	584	-	243	-	-	-	-	-
Foremen and overseers.....	912	-	-	-	912	-	-	-	-	-
Foresters and timber cruisers.....	3,182	-	-	-	3,182	-	-	-	-	-
Lumbermen.....	37,438	-	5	290	37,143	-	-	-	-	-
Mining, Quarrying, Oil and Salt Wells.....	59,585	515	2,705	42	55,223	6	3	-	-	3
Coal Mining.....	27,749	124	51	20	27,659	1	-	-	-	1
Owners and managers.....	365	124	-	-	241	1	-	-	-	1
Foremen and overseers.....	950	-	-	-	950	-	-	-	-	-
Haulage workers—drivers, cagers, etc.....	1,445	-	-	-	1,445	-	-	-	-	-
Miners.....	17,515	-	40	-	17,499	-	-	-	-	-
Labourers.....	6,069	-	-	26	6,063	-	-	-	-	-
Other Mining, etc.....	30,845	391	2,654	10	27,784	5	3	-	-	2
Owners and managers.....	884	391	-	-	493	5	3	-	-	-
Foremen and overseers.....	1,051	-	-	-	1,051	-	-	-	-	-
Haulage workers—drivers, cagers, etc.....	377	-	-	-	377	-	-	-	-	-
Millmen.....	784	-	-	-	784	-	-	-	-	-
Miners.....	12,883	-	597	-	12,286	-	-	-	-	-
Oil drillers.....	551	-	33	-	518	-	-	-	-	-
Quarriers and rock drillers.....	1,815	-	317	2	1,496	-	-	-	-	-
Labourers—mines and quarries.....	8,756	-	-	12	8,754	-	-	-	-	-
Manufacturing.....	358,024	18,997	27,809	2,066	309,132	84,657	319	8,078	892	75,368
Vegetable Products.....	29,659	3,118	1,600	322	24,696	6,681	58	49	21	6,668
Vegetable Foods.....	19,509	2,820	1,302	312	14,885	2,959	56	49	20	2,638
Owners and managers.....	3,965	2,820	-	1	1,144	72	56	-	-	16
Foremen and overseers.....	888	-	-	-	887	224	-	-	-	224
Bakers.....	9,394	-	988	149	8,257	318	-	40	15	257
Bakers' apprentices.....	1,145	-	-	89	1,056	31	-	-	-	27
Canners—fruit and vegetable.....	172	-	1	-	171	211	-	-	-	211
Confectionery and biscuit makers.....	1,698	-	48	4	1,646	1,448	-	3	1	1,444
Millers.....	1,528	-	348	64	1,216	-	-	-	-	-
Operative—sugar refining.....	154	-	-	-	154	15	-	-	-	15
Drinks and Beverages.....	2,098	134	4	2	1,928	209	-	-	-	205
Owners and managers.....	456	134	-	-	322	1	-	-	-	1
Foremen and overseers.....	235	-	-	-	235	8	-	-	-	8
Bottlers and cellar-men.....	804	-	-	2	804	165	-	-	-	165
Malsters, brewers, and stillmen.....	339	-	-	-	339	-	-	-	-	-
Tobacco Products.....	1,654	88	0	-	1,566	2,032	1	-	1	2,030
Owners and managers.....	189	88	-	-	111	2	-	-	-	1
Foremen and overseers.....	198	-	-	-	198	72	-	-	-	72
Cigarette makers.....	27	-	-	-	27	72	-	-	-	72
Cigar makers.....	756	-	6	-	750	816	-	-	-	816
Rubber Products.....	6,458	70	198	6	6,182	1,780	1	-	-	1,779
Owners and managers.....	357	70	-	-	287	1	1	-	-	-
Foremen and overseers.....	579	-	-	-	579	94	-	-	-	94
Compounders, moulders, and spreaders.....	201	-	-	-	201	-	-	-	-	-
Rubber shoe makers.....	1,191	-	-	-	1,191	587	-	-	-	587
Tire builders and tube makers.....	1,013	-	-	-	1,013	109	-	-	-	109
Vulcanizers.....	879	-	195	5	679	-	-	-	-	-
Animal Products.....	48,678	5,397	6,518	549	35,247	7,847	28	78	24	7,789
Animal Foods.....	18,193	1,206	438	375	16,174	1,649	0	1	4	1,638
Owners and managers.....	2,090	1,206	-	-	894	-	-	-	-	-
Foremen and overseers.....	600	-	-	-	600	15	-	-	-	15
Butchers and slaughterers.....	9,483	-	34	163	9,286	3	-	-	-	3
Butter and cheese makers.....	3,341	-	378	197	2,766	30	-	1	2	27

NOTE.—Most of the group and sub-group totals include persons in occupations too small to be separately classified.

TABLE 17. Gainfully occupied, classified according to occupation, industrial status and sex, Canada, 1931—Con.

Occupation	Males					Females				
	Total	Em- ployer	Own Account	No Pay	Wage- Earner	Total	Em- ployer	Own Account	No Pay	Wage- Earner
Manufacturing—Con.										
Animal Products—Con.										
Animal Foods—Con.										
Fish canners and curers.....	1,050	-	15	2	1,033	1,268	-	-	2	1,266
Meat canners, curers, and packers.....	504	-	7	-	497	256	-	-	-	256
Operatives—milk factories, dairies.....	827	-	2	6	819	25	-	-	-	25
Furs and Fur Goods.....	2,583	202	161	19	2,301	1,276	8	60	1	1,207
Owners and managers.....	247	202	-	-	45	10	-	-	-	2
Foremen and overseers.....	30	-	-	-	30	15	-	-	-	15
Furriers—fur cutters, dressers, sewers.....	2,406	-	161	19	2,226	1,251	-	60	1	1,190
Leather and Leather Products.....	21,799	959	5,913	155	14,772	4,922	8	11	19	4,884
Owners and managers.....	1,314	959	-	-	355	9	-	-	-	1
Foremen and overseers.....	661	-	-	-	561	144	-	-	-	144
Boot and shoe repairers.....	6,939	-	5,104	36	1,799	23	-	6	17	-
Boot and shoe makers' ap- prentices.....	493	-	-	91	402	2	-	-	2	-
Curriers, leather dressers, fin- ishers.....	563	-	-	1	562	108	-	-	-	108
Cutters.....	2,176	-	-	-	2,176	81	-	-	-	81
Glove makers.....	316	-	2	1	313	539	-	1	-	538
Harness and saddlery makers.....	1,459	-	749	17	702	1	-	-	-	1
Machine operators—boots and shoes.....	5,822	-	-	1	5,821	3,288	-	-	-	3,288
Tanners.....	751	-	65	8	688	1	-	1	-	-
Trunk, belt, and bag makers.....	375	-	3	-	372	56	-	-	-	56
Textile Products.....	57,167	2,478	3,285	124	51,287	58,043	153	7,751	803	49,329
Textiles.....	13,882	421	29	12	13,400	14,214	6	13	17	14,178
Owners and managers.....	1,135	421	-	-	714	19	-	-	-	13
Foremen and overseers.....	1,214	-	-	-	1,214	305	-	-	-	305
Bleachers and dyers.....	1,054	-	-	-	1,054	69	-	-	-	69
Breakers, pickers, and wool sorters.....	183	-	-	-	183	81	-	-	-	81
Cards and drawing frame tenders.....	804	-	15	9	780	465	-	1	1	463
Inspectors and calendarers.....	749	-	-	-	749	578	-	-	-	578
Inspectors, lookers, and mend- ers.....	250	-	-	-	256	1,485	-	-	-	1,485
Loom fixers and card grinders.....	423	-	-	-	423	-	-	-	-	-
Spinners.....	1,854	-	2	1	1,851	2,586	-	3	8	2,575
Spoolers, warpers, and beamers.....	456	-	-	-	456	2,152	-	-	-	2,152
Textile printers.....	201	-	-	-	201	34	-	-	-	34
Weavers.....	3,861	-	12	-	3,849	3,281	-	9	8	3,264
Textile Goods and Wearing Ap- parel.....	23,305	2,052	3,254	112	17,887	43,829	152	7,738	788	35,151
Owners and managers.....	2,633	2,052	-	-	581	179	152	-	-	27
Foremen and overseers.....	461	-	-	-	461	741	-	-	-	741
Cutters.....	2,543	-	-	-	2,543	493	-	-	-	493
Dressmakers.....	-	-	-	-	-	10,040	-	6,044	144	3,852
Dressmakers' apprentices.....	-	-	-	-	-	371	-	-	82	289
Hat and cap makers.....	969	-	7	4	958	743	-	2	1	740
Knitters.....	1,748	-	8	-	1,740	2,258	-	29	10	2,229
Milliners.....	35	-	2	-	33	2,575	-	582	4	1,989
Milliners' apprentices.....	-	-	-	-	-	188	-	-	25	163
Sewers, sewing machinists— shop, factory.....	3,097	-	-	-	3,097	19,779	-	-	3	19,776
Sewers, seamstresses—not in factory.....	204	-	17	17	170	3,547	-	858	503	2,186
Tailors and tailoresses.....	10,123	-	3,160	23	6,940	1,569	-	163	9	1,397
Tailors' apprentices.....	414	-	-	65	349	94	-	-	6	88
Tent, sail, awning makers.....	181	-	24	-	157	37	-	-	-	37
Wood Products, Pulp, Paper, and Paper Products, Printing and Publishing.....	65,254	5,804	2,840	229	56,967	6,073	43	187	59	6,404
Wood Products.....	31,787	3,411	2,185	170	26,001	794	14	185	9	586
Owners and managers.....	4,493	3,411	-	-	1,082	16	14	-	-	2
Foremen and overseers.....	1,641	-	-	-	1,641	12	-	-	-	12
Box, basket, and packing case makers.....	1,178	-	276	17	885	354	-	181	9	104
Cabinet and furniture makers.....	3,490	-	384	3	3,103	-	-	-	-	-
Cabinet and furniture makers' apprentices.....	248	-	-	10	238	-	-	-	-	-
Canoe and boat builders and repairers.....	514	-	210	9	295	-	-	-	-	-
Carriage and wagon builders, repairers.....	1,111	-	330	31	750	-	-	-	-	-
Coopers.....	1,323	-	112	19	1,192	-	-	-	-	-
Finishers and polishers.....	2,220	-	42	-	2,178	44	-	-	-	44
Inspectors, graders, and scalers.....	2,283	-	-	-	2,283	-	-	-	-	-
Sawyers.....	4,124	-	193	49	3,882	-	-	-	-	-

TABLE 17. Gainfully occupied, classified according to occupation, industrial status and sex, Canada, 1931—Con.

Occupation	Males					Females				
	Total	Em- ployer	Own Account	No Pay	Wage- Earner	Total	Em- ployer	Own Account	No Pay	Wage- Earner
Manufacturing—Con.										
Wood Products, Pulp, Paper, and Paper Products: Printing and Publishing—Con.										
Wood Products—Con.										
Upholsterers.....	2,992	-	360	1	2,631	151	-	2	-	149
Upholsterers' apprentices.....	218	-	-	0	212	8	-	-	-	8
Wood carvers and picture frame makers.....	467	-	74	-	393	6	-	2	-	4
Wood turners, planners—wood machinists.....	2,665	-	43	4	2,618	98	-	-	-	98
Pulp, Paper, and Paper Products	10,663	239	-	2	10,422	2,490	-	-	-	2,490
Owners and managers.....	1,146	239	-	-	907	5	-	-	-	5
Foremen and overseers.....	1,477	-	-	-	1,477	84	-	-	-	84
Machine operatives, n.e.s.....	2,297	-	-	-	2,297	62	-	-	-	62
Paper box, bag, and envelope makers.....	961	-	-	2	959	1,850	-	-	-	1,850
Paper makers.....	2,949	-	-	-	2,949	-	-	-	-	-
Printing, Publishing, Bookbind- ing.....	22,804	1,554	605	51	20,544	3,389	29	2	30	3,328
Owners and managers.....	2,568	1,554	-	-	1,014	68	29	-	-	39
Foremen and overseers.....	313	-	-	-	313	105	-	-	-	105
Bookbinders.....	822	-	31	1	790	1,137	-	1	13	1,123
Compositors: printers, n.s.....	10,869	-	544	6	10,319	386	-	1	5	380
Electrotypers and stereotypers	332	-	-	-	332	-	-	-	-	-
Lithographers.....	780	-	15	-	765	1	-	-	-	1
Machine tenders, n.e.s.....	1,151	-	-	5	1,146	631	-	-	9	622
Pressmen and plate printers...	1,588	-	-	-	1,588	-	-	-	-	-
Printers and bookbinders' ap- prentices.....	2,787	-	-	36	2,751	191	-	-	2	189
Process engravers.....	975	-	63	1	912	2	-	-	-	2
Proof readers.....	200	-	-	-	200	164	-	-	-	164
Metal Products.....	165,150	5,938	18,637	841	147,680	5,881	11	1	5	5,847
Metal Products, n.e.s.....	155,405	3,576	11,707	789	139,423	1,565	9	-	-	1,556
Owners and managers.....	6,579	3,576	-	-	3,003	28	9	-	-	19
Foremen and overseers.....	5,457	-	-	-	5,457	118	-	-	-	118
Blacksmiths, hammermen, and forgemen.....	15,902	-	6,398	154	9,350	-	-	-	-	-
Blacksmiths' apprentices.....	496	-	-	233	253	-	-	-	-	-
Boilermakers, platers, and riveters.....	4,696	-	7	-	4,689	-	-	-	-	-
Boilermakers' apprentices.....	141	-	-	-	141	-	-	-	-	-
Car builders and repairers.....	4,320	-	-	-	4,320	-	-	-	-	-
Coppersmiths.....	188	-	9	-	179	-	-	-	-	-
Electric and oxy-acetylene wel- ders.....	2,481	-	98	1	2,382	-	-	-	-	-
Filers and graders.....	2,162	-	99	3	2,060	-	-	-	-	-
Fitters, assemblers, and erectors.....	3,801	-	113	1	3,687	109	-	-	-	109
Furnacemen.....	1,574	-	-	-	1,574	-	-	-	-	-
Japanners, enamellers, lacque- rers.....	400	-	-	-	400	63	-	-	-	63
Machine tenders, n.e.s.....	4,122	-	-	1	4,121	616	-	-	-	616
Machinists.....	30,739	-	475	3	30,261	-	-	-	-	-
Machinists' apprentices.....	1,737	-	-	31	1,706	-	-	-	-	-
Mechanics, n.e.s.....	43,775	-	4,371	262	39,142	-	-	-	-	-
Millwrights.....	3,360	-	3	-	3,357	-	-	-	-	-
Moulders, coremakers, and casters.....	7,876	-	3	5	7,868	68	-	-	-	68
Moulders' apprentices.....	279	-	-	3	276	-	-	-	-	-
Patternmakers.....	1,342	-	10	1	1,331	-	-	-	-	-
Polishers and buffers.....	1,969	-	-	-	1,969	64	-	-	-	64
Press workers and stampers.....	886	-	-	-	886	149	-	-	-	149
Rolling mill men, n.e.s.....	468	-	-	-	468	-	-	-	-	-
Tool makers, die cutters and sinkers.....	2,851	-	16	-	2,835	-	-	-	-	-
Wire drawers, makers, and weavers.....	843	-	7	-	836	77	-	-	-	77
Precious Metals and Electro- plate.....	4,310	137	781	49	3,343	214	-	1	2	211
Owners and managers.....	210	137	-	-	73	3	-	-	-	3
Foremen and overseers.....	99	-	-	-	99	12	-	-	-	12
Goldsmiths and silversmiths...	268	-	8	-	260	16	-	-	-	16
Jewellers, watchmakers, re- pairers.....	2,605	-	752	3	1,910	113	-	1	1	111
Jewellers' and watchmakers' apprentices.....	342	-	-	44	298	3	-	-	1	2
Platers.....	800	-	21	2	777	5	-	-	-	5
Electrical Apparatus.....	5,345	219	209	3	4,914	1,882	2	-	-	1,880
Owners and managers.....	763	219	-	-	544	5	2	-	-	3

n.e.s.—not elsewhere specified.

n.s.—not specified.

TABLE 17. Gainfully occupied, classified according to occupation, industrial status and sex, Canada, 1931—Con.

Occupation	Males					Females				
	Total	Em- ployer	Own Account	No Pay	Wage- Earner	Total	Em- ployer	Own Account	No Pay	Wage- Earner
Manufacturing—Con.										
<i>Metal Products—Con.</i>										
Electrical Apparatus—Con.										
Foremen and overseers.....	523	-	-	-	523	47	-	-	-	47
Armature winders and coil in- sulators.....	354	-	1	-	353	230	-	-	-	230
Battery makers and repairers..	563	-	75	2	486	8	-	-	-	8
Electric lamp makers.....	35	-	-	-	35	128	-	-	-	128
Inspectors and testers.....	756	-	-	-	756	192	-	-	-	192
Instrument and appliance as- semblers.....	1,674	-	132	-	1,542	498	-	-	-	498
<i>Non-Metallic Mineral Products.</i>										
Owners and managers.....	9,869	998	878	85	7,978	580	9	-	-	511
Foremen and overseers.....	1,065	-	-	-	1,065	31	-	-	-	31
Aerated water makers.....	73	-	17	3	53	2	-	-	-	2
Brick and tile moulders and makers.....	653	-	15	2	636	-	-	-	-	-
Furnacemen and kilnmen— burners.....	389	-	4	-	385	-	-	-	-	-
Glass blowers.....	194	-	-	-	194	7	-	-	-	7
Lime, plaster, and cement ma- kers.....	183	-	19	-	164	-	-	-	-	-
Moulders and pressers—glass..	201	-	-	-	201	15	-	-	-	15
Potters, glazers and decora- tors.....	205	-	7	1	197	18	-	-	-	18
Stone cutters, dressers, and carvers.....	2,895	-	198	11	2,686	-	-	-	-	-
<i>Chemical and Allied Products...</i>										
Owners and managers.....	4,588	409	85	-	3,888	453	8	9	1	441
Foremen and overseers.....	1,147	409	-	-	738	18	8	-	-	10
Distillers and stillmen.....	291	-	-	-	291	57	-	-	-	57
Paint and varnish makers.....	431	-	-	-	431	14	-	-	-	14
Processmen and furnacemen...	858	-	-	-	858	2	-	-	-	2
<i>Miscellaneous Products.....</i>										
Owners and managers.....	4,581	508	580	4	3,496	679	10	16	-	954
Foremen and overseers.....	983	502	-	-	481	14	10	-	-	4
Brush and broom makers.....	311	-	-	-	311	77	-	-	-	77
Button makers.....	463	-	14	-	479	104	-	-	-	104
Mattress makers.....	100	-	-	1	99	61	-	-	-	61
Musical instrument makers....	328	-	7	-	321	81	-	1	-	80
Scientific instrument and pro- fessional equipment makers and repairers.....	994	-	376	-	618	27	-	1	-	26
Electric Light and Power (In- cluding Stationary Engi- neers).	32,453	16	-	27	32,410	3	-	-	-	3
Owners and managers.....	652	16	-	-	636	3	-	-	-	3
Foremen and overseers.....	487	-	-	-	487	-	-	-	-	-
Boiler firemen.....	6,817	-	-	14	6,803	-	-	-	-	-
Dynamo, motor, and switch board operators.....	1,953	-	-	-	1,953	-	-	-	-	-
Holstmen, crasemen, and der- rickmen.....	3,586	-	-	-	3,586	-	-	-	-	-
Oilers of machinery.....	1,428	-	-	-	1,428	-	-	-	-	-
Pumpmen.....	992	-	-	-	992	-	-	-	-	-
Stationary engineers, n.e.s....	16,538	-	-	13	16,525	-	-	-	-	-
Building and Construction....	262,970	11,596	26,757	803	163,814	96	6	-	-	90
Owners, managers, builders, and contractors.....	13,012	11,596	-	-	1,416	9	6	-	-	3
Foremen and overseers.....	5,381	-	-	-	5,380	-	-	-	-	-
Brick and stone masons.....	10,823	-	1,164	8	9,651	-	-	-	-	-
Brick and stone masons' ap- prentices.....	426	-	-	46	380	-	-	-	-	-
Carpenters.....	79,764	-	11,273	67	68,424	-	-	-	-	-
Carpenters' apprentices.....	1,600	-	-	219	1,381	-	-	-	-	-
Cement finishers.....	854	-	58	1	795	-	-	-	-	-
Electricians and wiremen.....	20,231	-	1,702	5	18,524	-	-	-	-	-
Electricians', wiremen's ap- prentices.....	1,829	-	-	58	1,764	-	-	-	-	-
Painters, decorators, and gla- ziers.....	33,687	-	7,863	27	25,797	-	-	-	-	-
Painters' apprentices.....	1,140	-	-	143	997	-	-	-	-	-
Plasterers and lathers.....	5,953	-	985	4	4,964	-	-	-	-	-
Plasterers' and lathers' ap- prentices.....	209	-	-	29	240	-	-	-	-	-
Plumbers, steam fitters, and gas fitters.....	15,593	-	2,340	20	13,233	-	-	-	-	-
Plumbers' apprentices.....	1,873	-	-	99	1,779	-	-	-	-	-
Roofers (not metal) and slaters	794	-	147	4	643	-	-	-	-	-

TABLE 17. Gainfully occupied, classified according to occupation, industrial status and sex, Canada, 1931—Con.

Occupation	Males					Females				
	Total	Em- ployer	Own Account	No Pay	Wage- Earner	Total	Em- ployer	Own Account	No Pay	Wage- Earner
Building and Construction										
—Con.										
Sheet metal workers and tin- smiths.....	6,738	-	1,144	9	5,585	87	-	-	-	87
Sheet metal workers' appren- tices.....	628	-	-	60	568	-	-	-	-	-
Structural iron workers and steel erectors.....	2,005	-	4	-	2,001	-	-	-	-	-
Transportation and Commu- nication	248,598	5,402	14,371	1,063	227,762	17,335	42	6	25	17,162
Railway Transportation	82,748	5	-	-	82,743	16	-	-	-	16
Railway officers—steam rail- way.....	1,760	-	-	-	1,760	-	-	-	-	-
Managers and officials—electric railway.....	200	3	-	-	197	-	-	-	-	-
Foremen, inspectors—steam railway.....	5,174	-	-	-	5,174	-	-	-	-	-
Foremen, inspectors—electric railway.....	648	-	-	-	648	-	-	-	-	-
Agents—ticket and station.....	5,323	-	-	-	5,323	16	-	-	-	16
Baggage men and expressmen.....	1,921	-	-	-	1,921	-	-	-	-	-
Brakemen.....	8,495	-	-	-	8,495	-	-	-	-	-
Conductors—street car.....	3,840	-	-	-	3,840	-	-	-	-	-
Dispatchers.....	555	-	-	-	555	-	-	-	-	-
Gate tenders.....	279	-	-	-	279	-	-	-	-	-
Locomotive engineers.....	7,520	-	-	-	7,520	-	-	-	-	-
Locomotive firemen.....	5,948	-	-	-	5,948	-	-	-	-	-
Motormen.....	4,833	-	-	-	4,833	-	-	-	-	-
Porters—railway.....	1,654	-	-	-	1,654	-	-	-	-	-
Railway conductors—steam railway.....	4,673	-	-	-	4,673	-	-	-	-	-
Section foremen, sectionmen, trackmen.....	23,587	-	-	-	23,587	-	-	-	-	-
Switchmen, signalmen, and flagmen.....	4,349	-	-	-	4,349	-	-	-	-	-
Yardmen, n.e.s.....	2,148	-	-	-	2,148	-	-	-	-	-
Water Transportation	89,455	355	577	81	88,620	216	6	-	-	210
Managers and officials.....	770	348	-	-	422	6	6	-	-	-
Foremen and overseers.....	502	-	-	-	502	-	-	-	-	-
Captains, mates, and pilots.....	3,760	7	190	-	3,573	-	-	-	-	-
Engineering officers.....	3,262	-	-	-	3,262	-	-	-	-	-
Firemen and trimmers—on ships.....	1,907	-	-	-	1,907	-	-	-	-	-
Lockkeepers, canalmen, and bontmen.....	1,332	-	107	4	1,131	-	-	-	-	-
Longshoremen and stevedores.....	4,816	-	-	-	4,816	-	-	-	-	-
Pursers and stewards.....	979	-	-	-	979	198	-	-	-	198
Seamen, sailors, and deck- hands.....	11,410	-	-	75	11,335	-	-	-	-	-
Road Transportation	96,199	4,989	15,918	885	78,409	50	39	6	-	8
Owners and managers—bus and taxicab line.....	731	564	40	-	118	8	-	-	-	-
Owners and managers—cartage and transfer.....	2,870	2,109	412	-	289	23	-	-	-	1
Owners and managers—garage.....	4,114	2,256	1,400	-	458	6	6	-	-	-
Foremen—bus and taxicab line.....	39	-	-	-	39	-	-	-	-	-
Foremen—cartage and transfer.....	337	-	-	-	337	-	-	-	-	-
Foremen and overseers—garage.....	232	-	-	-	232	-	-	-	-	-
Chauffeurs and bus drivers.....	15,388	-	3,018	129	12,241	12	-	6	-	6
Deliverymen and drivers, n.s.....	6,244	-	77	130	6,037	-	-	-	-	-
Teamsters, draymen, carriage drivers.....	22,286	-	4,097	313	17,876	-	-	-	-	-
Truck drivers.....	48,698	-	4,863	313	38,522	-	-	-	-	-
Other Transportation and Com- munication	59,218	55	78	97	58,988	16,955	-	-	25	16,989
Managers—telegraphs and tele- phones.....	839	6	-	-	833	66	-	-	-	66
Owners and managers—other transportation.....	2,709	40	-	-	2,660	931	-	-	-	931
Foremen—telegraphs and tele- phones.....	1,144	-	-	-	1,144	414	-	-	-	414
Foremen—other transportation.....	111	-	-	-	111	-	-	-	-	-
Aviators.....	335	-	31	-	304	-	-	-	-	-
Linemen and cablemen.....	6,784	-	-	-	6,784	-	-	-	-	-
Messengers.....	12,880	-	-	89	12,791	309	-	-	5	355
Postmen and mail carriers.....	6,700	-	43	-	6,657	51	-	-	-	51
Radio station operators.....	506	-	-	-	506	-	-	-	-	-
Telegraph operators.....	6,035	-	-	-	6,035	749	-	-	-	749
Telephone operators.....	960	-	-	-	960	14,373	-	-	20	14,353

TABLE 17.—Gainfully occupied, classified according to occupation, industrial status and sex, Canada, 1931—Con.

Occupation	Males					Females				
	Total	Em- ployer	Own Account	No Pay	Wage- Earner	Total	Em- ployer	Own Account	No Pay	Wage- Earner
Warehousing and Storage	26,932	70	6	5	26,912	8,290	-	-	1	8,199
Owners and managers.....	957	70	-	-	887	-	-	-	-	477
Foremen and overseers.....	388	-	-	-	388	-	-	-	-	-
Packers, wrappers, and label- lers.....	4,201	-	-	3	4,288	7,653	-	-	-	7,653
Shippers.....	15,045	-	-	2	15,043	477	-	-	-	-
Warehousemen and storekeep- ers.....	5,308	-	3	-	6,305	29	-	-	1	28
Weighmen.....	1,003	-	2	-	1,001	41	-	-	-	41
Trade	259,799	39,482	54,564	3,454	162,299	64,113	2,054	4,175	2,166	45,718
Owners, managers, and dealers — retail stores.....	94,162	36,349	45,035	-	13,778	6,709	2,018	4,041	-	650
Owners, managers, and dealers — wholesale, import, and ex- port houses; commercial agen- cies.....	13,336	3,558	3,944	-	5,324	104	27	23	-	52
Floorwalkers and foremen.....	1,545	-	-	-	1,545	263	-	-	-	263
Advertising agents.....	1,997	10	261	-	1,726	132	-	9	-	123
Auctioneers and appraisers.....	668	38	320	-	310	2	-	1	-	1
Brokers and agents, n.e.s.....	6,073	331	1,219	-	4,523	186	2	21	-	163
Collectors.....	1,996	20	123	1	1,852	56	2	7	-	47
Commercial travellers.....	10,495	-	-	-	16,495	71	-	-	-	71
Credit men.....	712	5	16	-	691	15	2	-	-	13
Decorators, drapers, window dressers.....	733	3	33	-	697	169	3	22	-	144
Hawkers and pedlars.....	4,470	156	3,410	46	858	57	-	49	3	6
Inspectors, gaugers, and sam- plers.....	2,636	-	-	-	2,636	385	-	-	-	385
Newsboys.....	597	3	136	2	456	5	-	-	-	5
Purchasing agents and buyers.....	6,268	-	-	-	6,268	260	-	-	1	259
Sales agents, canvassers, de- monstrators.....	6,441	-	-	4	6,437	545	-	-	1	544
Salesmen and saleswomen.....	100,537	-	-	3,388	97,149	44,990	-	-	2,159	42,831
Finance, Insurance	36,232	2,050	7,191	1	27,010	571	4	129	-	447
Officials—finance.....	5,512	211	-	-	5,301	12	-	-	-	12
Insurance officials.....	3,045	73	-	-	2,972	26	-	-	-	26
Insurance agents.....	17,049	501	2,710	-	13,838	350	-	25	-	325
Pawnbrokers and money lend- ers.....	60	4	21	-	25	-	-	-	-	-
Real estate agents and dealers.....	5,518	507	3,140	1	1,864	146	4	93	-	49
Stock and bond brokers.....	4,873	739	1,228	-	2,906	36	-	1	-	35
Service	287,625	16,239	46,811	6,637	217,947	347,471	1,958	37,062	37,384	271,977
Public Administration and Defence	81,881	8	40	-	81,866	198	-	-	-	198
Public service officials.....	9,670	-	-	-	9,670	100	-	-	-	100
Firemen—fire department.....	4,610	-	-	-	4,610	-	-	-	-	-
Officers—army, navy, and air force.....	683	-	-	-	683	-	-	-	-	-
Other ranks—army, navy, and air force.....	3,538	-	-	-	3,538	-	-	-	-	-
Police and detectives.....	10,900	5	40	-	10,855	78	-	-	-	78
Professional Service	190,775	8,781	27,558	5,854	85,608	117,799	186	18,580	23,419	80,800
Accountants and auditors.....	17,052	273	1,320	2	15,448	571	2	14	-	555
Agricultural professionals.....	848	3	19	1	825	51	-	-	1	50
Architects.....	1,296	128	563	-	605	2	-	1	-	1
Artists, art teachers, sculptors, painters.....	1,909	34	703	-	1,172	709	5	294	43	367
Authors, editors, and journa- lists.....	2,880	50	320	-	2,510	464	2	105	-	357
Chemists, assayers, metal- lurgists.....	3,200	18	101	-	3,081	118	-	1	43	74
Civil engineers and surveyors.....	7,524	163	808	-	6,553	-	-	-	-	-
Clergymen and priests.....	12,662	-	-	1,165	11,497	16	-	-	-	16
Dentists.....	4,007	233	3,555	-	219	32	-	24	1	7
Designers and draughtsmen.....	4,596	16	67	3	4,510	105	-	6	-	99
Electrical engineers.....	3,137	25	170	-	3,742	-	-	-	-	-
Health professionals, n.e.s.....	492	20	304	2	166	928	1	151	47	729
Judices and magistrates.....	539	-	-	-	539	5	-	-	-	5
Lawyers and notaries.....	8,004	1,011	5,008	-	1,985	54	4	38	-	17
Librarians.....	203	-	2	4	197	809	-	-	12	794
Mechanical engineers.....	2,859	36	138	-	2,685	-	-	-	-	-
Mining engineers.....	1,498	36	236	-	1,226	-	-	-	-	-
Mission workers.....	352	-	-	90	263	223	-	-	27	196
Musicians and music teachers.....	4,145	60	1,092	9	2,594	4,041	15	3,144	207	1,275
Nuns and brothers, n.e.s.....	1,133	-	-	1,133	-	2,260	-	-	8,290	-
Nurses—graduate.....	-	-	-	-	-	20,402	35	8,796	1,865	9,767
Nurses—in training.....	-	-	-	-	-	11,436	-	-	3,315	8,121
Officials—industrial associa- tions.....	274	-	-	-	274	4	-	-	-	4
Opticians.....	853	74	408	-	371	16	-	6	2	8

TABLE 17.—Gainfully occupied, classified according to occupation, industrial status and sex, Canada, 1931—Con.

Occupation	Males					Females				
	Total	Em- ployer	Own Account	No Pay	Wage- Earner	Total	Em- ployer	Own Account	No Pay	Wage- Earner
Service—Con.										
<i>Professional Service—Con.</i>										
Osteopaths and chiropractors..	452	11	429	-	12	90	3	83	-	4
Photographers.....	2,240	109	903	14	1,124	508	12	56	18	422
Physicians and surgeons.....	9,817	279	8,181	-	1,366	203	5	137	1	69
Professors and college principal- pals.....	2,941	-	-	898	2,043	259	-	-	34	225
Religious workers, n.e.s.....	1,321	-	32	-	1,221	1,018	-	14	273	731
Social welfare workers, n.e.s.....	381	-	-	3	378	792	-	-	114	678
Teachers—dancing and physical instruction.....	704	10	109	-	585	241	3	97	1	140
Teachers—school.....	18,274	71	295	1,817	16,091	64,709	39	411	0,012	55,248
Veterinary surgeons.....	1,042	29	739	-	283	-	-	-	-	-
<i>Recreational Service.....</i>	<i>7,458</i>	<i>738</i>	<i>1,868</i>	<i>89</i>	<i>5,565</i>	<i>620</i>	<i>89</i>	<i>98</i>	<i>8</i>	<i>500</i>
Owners and managers—theatres and theatre agencies.....	1,010	328	19	-	669	20	12	-	-	8
Owners and managers—other entertainment.....	2,061	460	952	-	649	49	14	19	-	18
Actors and actresses.....	223	-	33	-	190	208	-	47	-	161
Showmen and sportsmen.....	929	5	191	1	732	19	-	7	1	11
Stage hands, projectionists.....	1,358	-	4	2	1,352	5	-	-	-	5
Ushers.....	521	-	-	1	520	215	-	-	-	215
<i>Personal Service.....</i>	<i>114,544</i>	<i>11,156</i>	<i>16,158</i>	<i>1,893</i>	<i>86,360</i>	<i>819,320</i>	<i>1,761</i>	<i>28,488</i>	<i>15,636</i>	<i>181,867</i>
Hotel managers and keepers...	5,399	4,209	58	-	1,132	711	581	10	7	107
Lodging and boarding house keepers.....	1,742	238	1,504	-	-	18,707	387	18,320	-	-
Restaurant, café, and tavern keepers.....	9,765	4,513	4,352	-	900	1,318	504	619	1	194
Barbers, hairdressers, mani- curists.....	15,906	1,620	7,962	19	6,305	6,300	202	2,059	10	3,133
Barbers' and hairdressers' ap- prentices.....	462	-	-	132	330	374	-	-	115	259
Hell-boys and porters—not rail- way.....	3,652	-	-	32	3,620	89	-	-	62	27
Bootblacks.....	948	46	265	12	625	-	-	-	-	-
Charworkers and cleaners.....	613	10	68	2	535	3,755	-	48	5	3,702
Cooks.....	17,832	-	-	161	17,671	7,818	-	-	947	8,771
Domestic servants, n.e.s.....	8,511	-	-	484	8,027	134,043	-	-	7,344	126,699
Elevator tenders.....	2,901	-	-	1	2,900	459	-	-	5	454
Housekeepers, matrons, and stewards.....	1,031	-	-	51	980	25,787	1	-	4,250	21,536
Janitors and sextons.....	14,691	-	-	61	14,630	949	-	-	36	113
Nurses—practical; orderlies.....	2,004	-	6	42	1,956	4,698	-	494	490	3,718
Undertakers.....	1,612	410	576	-	626	504	11	5	-	1
Waiters and waitresses.....	11,203	-	-	263	11,000	12,797	-	-	296	12,561
Watchmen and caretakers, n.e.s.....	13,411	-	-	29	13,382	101	-	-	2	99
Window cleaners.....	713	32	226	6	449	-	-	-	-	-
<i>Laundry; Cleaning, Dyeing, and Pressing.....</i>	<i>15,623</i>	<i>1,516</i>	<i>5,116</i>	<i>94</i>	<i>8,898</i>	<i>3,018</i>	<i>48</i>	<i>1,068</i>	<i>587</i>	<i>7,637</i>
Owners and managers.....	1,841	1,515	7	-	319	59	46	-	-	13
Foremen and overseers.....	1,661	-	-	-	161	118	-	-	-	118
Cleaners and dyers.....	1,632	-	470	7	1,046	832	-	21	3	309
Ironers and pressers.....	3,366	-	122	11	3,233	2,048	-	4	8	2,036
Washing and drying machine operators.....	429	-	-	1	428	431	-	-	3	428
Clerical.....	124,139	-	23	367	123,749	116,927	5	224	565	116,133
Bookkeepers and cashiers.....	29,553	-	4	67	29,482	21,419	-	-	218	21,201
Office appliance operators.....	239	-	4	-	235	1,503	-	1	-	1,502
Stenographers and typists.....	3,531	-	15	9	3,507	64,993	5	223	110	64,655
Other clerical (office clerks)...	90,816	-	-	291	90,525	29,018	-	-	297	28,776
Other.....	425,408	-	-	3,124	422,284	11,707	-	-	75	11,632
Labourers and unskilled work- ers (not agricultural, mining, or logging).....	425,408	-	-	3,124	422,284	11,707	-	-	75	11,632
Unspecified.....	1,357	27	31	8	1,291	297	-	-	3	294
Owners and managers.....	103	27	-	-	76	1	-	-	-	1
Foremen and overseers.....	93	-	-	-	93	13	-	-	-	13

TABLE 18. Occupations arranged in ascending order of percentage of male wage-earners not at work June 1, 1931, showing percentage of males losing any time and weeks lost per male losing time, percentage of occupation female and juvenile, percentage of females not at work June 1 and weeks lost per juvenile, Canada, year ended June 1, 1931

Occupation	P.C. of Male Wage-Earners		Weeks Lost per Male Wage-Earner Losing Time	P.C. of Occupation Female	P.C. of Females Not at Work June 1	P.C. of Male Wage-Earners Juvenile	Weeks Lost per Juvenile
	Not at Work June 1	Losing Time					
Foremen—bus and taxicab line.....	-	13-	7-40	-	-	8-	14-00
Justices and magistrates.....	0-4	0-7	30-25	0-9	-	-	-
Managers and officials—electric railway.....	0-5	0-5	18-00	-	-	-	-
Managers—telegraphs and telephones.....	0-5	1-8	12-73	7-8	-	-	-
Managers—Electric Light and Power.....	0-6	1-4	19-33	0-5	-	-	-
Managers—other transportation.....	0-64	1-8	20-60	25-03	1-1	0-4	-
Clergymen and priests.....	0-77	1-21	23-57	0-13	-	-	-
Professors and college principals.....	0-78	1-47	20-13	9-02	3-1	-	-
Managers—Chemical and Allied Products (Mfg.).....	0-8	3-1	23-39	1-3	-	-	-
Physicians and surgeons.....	0-81	2-34	13-97	4-21	-	-	-
Managers—Electrical Apparatus (Mfg.).....	0-9	2-6	15-21	0-5	-	-	-
Foremen—other transportation.....	0-9	9-9	9-18	-	-	-	-
Managers—Laundering, Cleaning, Dyeing, and Pressing.....	0-9	5-6	21-39	3-9	8-	-	-
Managers—Precious Metals and Electroplate (Mfg.).....	1-	1-	13-00	4-	-	-	-
Railway officers—steam railway.....	1-08	3-75	18-55	-	-	-	-
Insurance officials.....	1-14	2-82	21-87	0-87	-	-	-
Foremen and overseers—Laundering, Cleaning, Dyeing, and Pressing.....	1-2	8-1	12-85	42-3	2-5	0-6	-
Officials—finance.....	1-25	2-28	19-85	0-23	-	-	-
Other ranks—army, navy, and air force.....	1-27	3-78	18-39	-	-	11-16	2-10
Foremen and overseers—Printing, Publishing, Book-binding.....	1-3	8-6	8-99	25-1	2-9	-	-
Religious workers.....	1-31	3-19	20-74	37-45	8-0	3-19	0-05
Managers—Pulp, Paper, and Paper Products (Mfg.).....	1-4	3-1	20-04	0-5	-	-	-
Managers and officials—Water Transportation.....	1-4	6-4	20-44	-	-	-	-
Veterinary surgeons.....	1-4	2-8	23-38	-	-	-	-
Officials—industrial associations—Professional Service.....	1-5	2-6	20-43	1-4	-	-	-
Postmen and mail carriers.....	1-68	6-52	14-60	0-76	4-	2-40	2-46
Managers—Miscellaneous Products (Mfg.).....	1-7	3-5	19-88	0-8	-	-	-
Managers—telegraphs and telephones.....	1-75	8-02	11-47	26-57	3-4	0-17	-
Lawyers and notaries.....	1-75	8-59	27-95	1-54	-	-	-
Dispatchers—railway transportation.....	1-8	7-0	14-38	-	-	-	-
Managers—Furn and Fur Goods (Mfg.).....	2-0	4-	25-50	4-	-	-	-
Managers—Non-Metallic Mineral Products (Mfg.).....	2-0	5-0	19-38	1-4	-	-	-
Managers—Vegetable Foods (Mfg.).....	2-01	3-70	18-19	1-38	13-	0-09	-
Managers—Printing, Publishing, Bookbinding.....	2-07	3-35	25-82	3-70	-	-	-
Public service officials—Public Administration and Defence.....	2-08	5-46	19-63	0-09	1-0	-	-
Managers—Rubber Products (Mfg.).....	2-1	5-2	20-47	-	-	-	-
Managers—Textile Goods and Wearing Apparel (Mfg.).....	2-1	6-2	15-31	4-4	7-	-	-
Foremen and overseers—Agriculture.....	2-13	8-89	17-74	0-63	-	0-63	0-11
Firemen—Public Administration.....	2-19	5-97	17-17	-	-	0-18	-
Foremen and overseers—garage.....	2-2	13-8	6-13	-	-	-	-
Officers—army, navy, and air force.....	2-2	2-9	22-00	-	-	0-7	2-80
Managers—Metal Products (Mfg.).....	2-2	4-60	19-37	0-68	5-	-	-
Managers—Leather Products (Mfg.).....	2-3	3-9	20-57	0-3	-	-	-
Foremen, inspectors—electric railway.....	2-3	12-0	9-50	-	-	-	-
Managers—Warehousing and Storage.....	2-5	5-8	15-49	-	-	-	-
Managers—wholesale, import and export houses; commercial agencies.....	2-52	5-01	19-37	0-88	-	-	-
Credit men—Trade.....	2-6	6-7	19-22	1-9	-	0-1	-
Managers—Tobacco Products (Mfg.).....	2-7	2-7	52-09	0-9	-	-	-
Other—Personal Service.....	2-73	12-65	16-35	46-55	6-02	3-45	4-28
Police and detectives—Public Administration and Defence.....	2-79	7-67	19-24	0-71	8-	0-17	5-22
Managers—Unspecified.....	3-	8-	11-50	1-	-	-	-
Managers—Animal Foods (Mfg.).....	3-0	5-4	24-09	0-4	-	-	-
Foremen and overseers—Precious Metals and Electroplate (Mfg.).....	3-0	9-	17-44	10-8	8-	-	-
Managers—Textile Products (Mfg.).....	3-1	7-1	22-86	1-8	-	-	-
Foremen and overseers—Electrical Apparatus (Mfg.).....	3-1	15-9	11-51	8-2	0-	0-4	-
Managers—retail stores.....	3-19	7-51	12-22	4-51	2-8	0-45	6-84
Social welfare workers—Drinks and Beverages (Mfg.).....	3-2	10-3	24-49	64-29	2-9	0-5	20-00
Owners and managers—Drinks and Beverages (Mfg.).....	3-3	4-2	23-71	0-8	-	-	-
Foremen and overseers—Electric Light and Power.....	3-3	15-8	11-08	-	-	-	-
Managers—garage.....	3-3	8-7	18-03	-	-	-	-
Managers—cartage and transfer.....	3-5	5-9	16-18	0-3	-	-	-
Teachers—school.....	3-51	6-41	23-02	77-44	3-09	3-11	2-88
Agricultural professionals.....	3-6	10-2	22-86	5-7	12-	-	-
Librarians.....	3-6	5-1	20-50	80-1	1-9	-	-
Foremen, inspectors—steam railway.....	3-38	16-55	13-17	-	-	-	-
Foremen and overseers—Warehousing and Storage.....	3-9	15-2	18-90	-	-	-	-
Floorwalkers and foremen—Trade.....	3-95	15-28	18-84	15-94	5-1	0-45	3-67
Managers—Wood Products (Mfg.).....	3-97	8-32	19-02	0-18	-	-	-

¹ Not agricultural, mining or logging.

NOTE: Where the base of the percentage is less than 100, the percentage is given to the nearest whole number; between 100 and 1,000, to one place of decimals, and 1,000 and over, to two places of decimals.

TABLE 18. Occupations arranged in ascending order of percentage of male wage-earners not at work June 1, 1931, showing percentage of males losing any time and weeks lost per male losing time, percentage of occupation female and juvenile, percentage of females not at work June 1 and weeks lost per juvenile, Canada, year ended June 1, 1931—Con.

Occupation	P.C. of Male Wage-Earners		Weeks Lost per Male Wage-Earner Losing Time	P.C. of Occupation Female	P.C. of Females Not at Work June 1	P.C. of Male Wage-Earners Juvenile	Weeks Lost per Juvenile
	Not at Work June 1	Losing Time					
Foremen and overseers—Non-Metallic Mineral Products (Mfg.).....	4.04	22.82	14.14	2.83	19.	0.09	1.78
Mission workers.....	4.2	4.9	32.31	42.7	8.2	1.5	-
Agents—ticket and station—Railway Transportation.....	4.21	7.80	19.47	0.30	-	0.45	22.83
Other—Public Administration and Defence.....	4.23	19.87	17.83	0.87	-	0.72	15.36
Foremen and overseers—Vegetable Foods (Mfg.).....	4.5	16.3	14.65	2.03	8.5	0.1	-
Motormen—Railway Transportation.....	4.57	22.33	12.74	-	-	0.02	-
Other—Water Transportation.....	4.6	16.2	22.15	1.7	-	4.2	7.59
Foremen and overseers—Chemical and Allied Products (Mfg.).....	4.8	20.7	13.54	9.4	2.	-	-
Auctioneers and appraisers—Trade.....	4.8	11.3	20.23	0.3	-	0.3	-
Foremen and overseers—Textiles (Mfg.).....	4.86	20.28	12.61	20.08	3.9	0.08	-
Opticians.....	4.9	12.4	21.04	2.1	-	-	-
Insurance agents.....	4.91	12.76	22.69	2.29	4.3	0.61	4.99
Brokers and agents, n.e.c.—Trade.....	5.09	9.97	21.15	3.48	0.6	0.24	10.2
Foremen and overseers—Miscellaneous Products (Mfg.).....	5.1	20.3	16.16	19.8	4.	0.3	-
Managers—bus and taxicab line.....	5.1	9.3	29.27	-	-	-	-7
Authors.....	5.18	9.02	24.00	12.45	4.8	2.51	2.27
Foremen and overseers—Animal Foods (Mfg.).....	5.2	20.7	20.83	2.4	7.	-	-
Railway conductors—steam railway.....	5.40	19.88	13.81	-	-	-	-
Other—Professional Service.....	5.53	13.60	20.17	23.01	4.3	15.67	5.34
Janitors and sextons.....	5.53	16.56	30.91	5.87	2.0	0.09	8.99
Foremen—cartage and transfer.....	5.6	20.5	14.71	-	-	-	-
Dynamo, motor, and switch board operators—Electric Light and Power.....	5.63	20.02	14.95	-	-	1.39	6.13
Conductors—street car.....	5.68	24.64	13.99	-	-	0.05	45.00
Managers—Other Mining.....	5.7	11.8	24.90	0.4	-	-	-
Foremen and overseers—Leather and Leather Products (Mfg.).....	5.7	20.7	16.79	20.4	12.5	0.4	11.00
Restaurant keepers.....	5.78	13.8	22.27	17.73	3.6	0.2	-
Distillers and stillmen—Chemical and Allied Products (Mfg.).....	5.8	32.0	10.05	-	-	27.	13.63
Button makers—Miscellaneous Products (Mfg.).....	6.	62.	16.41	38.1	16.	0.6	-
Health professionals.....	6.0	15.1	26.60	81.5	14.5	0.6	-
Hotel managers and keepers.....	6.27	10.78	27.25	8.64	4.7	0.18	-
Managers—theatres and theatre agencies.....	6.3	11.7	25.13	1.2	-	0.4	1.67
Foresters and timber cruisers.....	6.33	39.91	20.19	-	-	2.36	11.25
Foremen and overseers—Rubber Products (Mfg.).....	6.4	33.9	13.14	14.0	10.	0.5	10.00
Gate tenders—Railway Transportation.....	6.4	11.9	21.31	3.1	-	-	-
Penitents.....	6.5	16.2	22.35	95.65	5.27	0.4	-
Housekeepers, matrons, and stewards.....	6.6	12.0	23.90	0.4	-	-	-
Managers—Coal Mining.....	6.8	19.6	15.87	3.3	13.	-	-
Foremen and overseers—Drinks and Beverages (Mfg.).....	6.8	59.9	14.70	72.08	11.51	21.5	11.03
Other—Tobacco Products (Mfg.).....	6.8	14.9	22.76	0.2	-	5.0	6.43
Undertakers.....	6.82	14.38	20.29	2.35	9.	-	-
Chemists, assayers, metallurgists.....	6.98	24.53	19.96	0.97	-	8.60	5.05
Butter and cheese makers (Mfg.).....	7.	20.	17.50	33.	7.	-	-
Foremen and overseers—Furs and Fur Goods (Mfg.).....	7.07	38.55	19.42	-	-	1.93	9.27
Lockkeepers, canalmen and boatmen.....	7.1	22.2	11.50	26.7	6.	0.5	-
Foremen and overseers—Tobacco Products (Mfg.).....	7.1	25.6	18.91	87.37	13.37	6.4	5.59
Clawworkers and cleaners.....	7.13	28.52	15.60	0.73	-	-	-
Foremen and overseers—Wood Products (Mfg.).....	7.18	16.63	22.28	6.65	9.8	0.64	-
Advertising agents—Trade.....	7.20	15.25	23.69	0.21	-	-	-
Managers—Building and Construction.....	7.25	15.16	23.74	7.79	11.9	2.05	6.42
Sales agents, canvassers, demonstrators.....	7.3	22.0	17.65	3.0	16.	7.2	6.73
Operatives—milk factories, dairies (Mfg.).....	7.41	11.93	27.12	3.47	5.6	-	-
Accountants and auditors.....	7.49	12.05	19.76	3.95	5.0	0.11	0.43
Purchasing agents and buyers.....	7.51	15.80	22.38	0.43	14.	0.24	6.00
Commercial travellers.....	7.51	15.80	22.38	0.43	14.	0.24	6.00
Foremen and overseers—Textile Goods and Wearing Apparel (Mfg.).....	7.6	23.0	14.84	61.65	8.2	1.3	2.50
Electrical engineers.....	7.64	14.32	20.75	-	-	-	-
Other—Road Transportation.....	7.7	35.8	20.24	0.4	-	2.7	12.86
Loom fixers and card grinders—Textiles (Mfg.).....	7.8	32.2	15.76	-	-	4.7	11.60
Egg-pickers and expressmen—Railway Transportation.....	7.91	19.38	15.93	-	-	0.73	13.07
Other—Trade.....	7.99	20.02	18.01	11.52	26.5	18.84	3.66
Aerated water makers—Non-Metallic Mineral Products (Mfg.).....	8.	32.	17.94	4.	-	11.	6.67
Pawnbrokers.....	8.	16.	31.00	-	-	-	-
Osteopaths and chiropractors.....	8.	17.	32.50	25.	25.	-	-
Foremen and overseers—Unspecified.....	8.	25.	18.55	12.3	8.	-	-
Foremen and overseers—Metal Products (Mfg.).....	8.06	30.49	17.08	2.12	8.5	0.18	12.60
Locomotive engineers.....	8.06	24.96	16.48	-	-	-	-
Other clerical.....	8.08	17.49	21.49	24.12	5.27	15.64	4.49
Nurses—practical.....	8.18	21.57	21.83	65.53	18.34	4.35	8.75
Haulage workers—drivers, engers, etc.—Other Mining.....	8.2	48.5	12.89	-	-	3.2	16.58
Scientific instrument and professional equipment makers and repairers—Miscellaneous Products (Mfg.).....	8.2	28.6	18.29	27.2	11.	3.4	4.80

TABLE 18. Occupations arranged in ascending order of percentage of male wage-earners not at work June 1, 1931, showing percentage of males losing any time and weeks lost per male losing time, percentage of occupation female and juvenile, percentage of females not at work June 1 and weeks lost per juvenile, Canada, year ended June 1, 1931—Con.

Occupation	P.C. of Male Wage-Earners		Weeks Lost per Male Wage-Earner Losing Time	P.C. of Occupation Female	P.C. of Females Not at Work June 1	P.C. of Male Wage-Earners Juvenile	Weeks Lost per Juvenile
	Not at Work June 1	Losing Time					
Decorators, drapers, window dressers—Trade.....	8-2	24-7	18-60	17-1	10-4	8-5	4-07
Teachers—dancing and physical instruction.....	8-2	24-3	25-16	19-31	8-6	3-8	14-32
Collectors—Trade.....	8-37	22-89	20-20	2-47	2-	4-86	5-17
Watchmen and caretakers, n.e.s.....	8-39	27-40	21-56	0-73	3-	1-13	16-32
Telephone operators.....	8-5	18-2	20-73	98-73	6-06	11-4	4-44
Inspectors and testers—Electrical Apparatus (Mfg.)..	8-6	29-9	16-03	20-8	10-9	3-7	12-06
Pumpmen—Electric Light and Power.....	8-6	28-6	16-06	-	-	0-9	15-78
Managers—Other Entertainment.....	8-6	21-3	22-45	2-7	6-	0-5	15-33
Other—Chemical and Allied Products (Mfg.).....	8-60	39-10	15-31	25-02	8-4	9-58	6-24
Other—Animal Foods (Mfg.).....	8-8	33-1	23-01	11-9	16-	11-7	10-59
Electric lamp makers—Electrical Apparatus (Mfg.)...	8-	49-	17-35	78-5	7-8	11-	9-25
Textile printers—Textiles (Mfg.).....	9-0	23-4	18-28	14-5	15-	12-9	4-50
Electrotypers and stereotypers—Printing, Publishing, Bookbinding.....	9-0	25-9	13-60	-	-	-	-
Architects.....	9-1	17-7	20-98	0-2	-	0-8	-
Section foremen, sectionmen; trackmen—Railway Transportation.....	9-17	37-76	22-00	-	-	2-30	17-77
Inspectors, gaugers, and samplers—Trade.....	9-18	24-81	18-42	12-74	17-1	5-12	8-78
Newsboys.....	9-2	19-1	28-70	1-1	-	68-2	4-69
Compounders, moulders, and spreaders—Rubber Products (Mfg.).....	9-5	62-2	16-44	-	-	1-0	23-00
Proof readers—Printing, Publishing, Bookbinding.....	9-57	17-30	17-30	45-1	1-8	0-7	-
Bell boys and porters—not railway.....	9-59	28-51	21-75	0-74	4-0	15-83	7-82
Other—Finance and Insurance.....	9-6	18-30	23-24	-	-	-	-
Malsters, brewers, and stillmen—Drinks and Beverages (Mfg.).....	9-7	31-2	21-50	-	-	0-9	-
Millmen—Other Mining.....	9-8	43-1	13-16	-	-	7-7	13-10
Foremen and overseers—Water Transportation.....	9-8	35-9	18-53	-	-	-	-
Real estate agents.....	9-88	17-97	31-61	2-56	8-0	0-38	-
Foremen and overseers—Other Mining.....	9-99	29-12	15-65	-	-	0-10	10-00
Delivery men and drivers, n.e.s.—Road Transportation.	9-99	30-63	21-01	-	-	26-85	9-19
Other—Vegetable Foods (Mfg.).....	10-1	37-2	17-12	43-1	15-1	14-3	11-59
Weightmen—Warehousing and Storage.....	10-19	30-27	17-21	3-93	20-	1-60	7-82
Car builders and repairers—Metal Products (Mfg.).....	10-39	37-41	14-40	-	-	0-65	10-29
Printers and bookbinders' apprentices—Printing, Publishing, Bookbinding.....	10-40	26-17	20-37	6-43	15-3	70-74	4-98
Furnacemen and kilnmen—burners—Non-Metallic Mineral Products (Mfg.).....	10-6	58-9	16-50	-	-	0-5	14-50
Elevator tenders.....	10-62	29-24	20-79	13-54	6-2	10-31	10-07
Bookkeepers, cashiers.....	10-63	19-13	23-73	41-83	6-89	6-00	5-33
Meat canners, curers, and packers (Mfg.).....	10-7	38-8	18-13	34-0	11-7	8-9	15-50
Lithographers—Printing, Publishing, Bookbinding.....	10-8	32-5	16-98	0-1	-	0-3	3-00
Stock and bond brokers.....	10-81	16-60	29-78	1-19	6-	0-55	7-13
Other—Printing, Publishing, Bookbinding.....	10-9	33-8	19-71	62-94	13-9	19-6	7-04
Inspectors, lookers, and menders—Textiles (Mfg.).....	10-9	42-2	17-34	85-30	8-75	14-5	5-62
Radio station operators—Other Transportation and Communication.....	10-9	25-5	22-02	-	-	4-9	3-40
Civil engineers and surveyors.....	10-94	20-04	22-78	-	-	-	-
Domestic servants.....	11-03	30-31	24-44	94-04	7-07	20-12	8-79
Warehousemen—Warehousing and Storage.....	11-08	29-80	18-78	0-53	7-	3-81	7-43
Other—Laundry.....	11-18	19-48	29-47	55-63	9-56	3-88	6-25
Salesmen and saleswomen.....	11-30	24-54	23-07	30-00	10-41	13-29	7-02
Shippers—Warehousing and Storage.....	11-31	31-77	19-09	3-07	9-0	9-57	8-52
Moulders and pressers—glass—Non-Metallic Mineral Products (Mfg.).....	11-4	65-7	19-01	6-9	20-	10-0	23-30
Foremen and overseers—Building and Construction.....	11-45	39-76	18-53	-	-	0-11	5-00
Photographers.....	11-48	23-22	22-68	27-30	12-6	15-04	4-31
Office appliance operators.....	11-49	20-9	21-49	86-47	9-45	27-7	6-11
Compositors, printers, n.e.s.—Printing, Publishing, Bookbinding.....	11-50	29-17	19-61	3-55	10-3	1-43	6-14
Other—Railway Transportation and Communication..	11-6	29-5	21-05	-	-	5-9	8-54
Foremen and overseers—Pulp, Paper, and Paper Products (Mfg.).....	11-65	36-49	14-41	5-38	8-	0-07	8-00
Messengers—Other Transportation and Communication.....	11-65	28-20	24-72	2-70	12-1	78-92	7-65
Bottlers and cellar-men—Drinks and Beverages (Mfg.)..	11-8	44-9	22-03	17-0	30-9	15-9	13-01
Paint and varnish makers—Chemical and Allied Products (Mfg.).....	11-8	36-7	19-09	3-1	21-	7-4	11-56
Designers and draughtsmen.....	11-89	24-18	20-41	2-15	11-	8-51	7-46
Bleachers and dyers—Textiles (Mfg.).....	11-95	45-45	17-64	6-14	12-	10-91	8-72
Stenographers and typists.....	11-95	22-04	25-08	94-85	9-78	24-41	6-60
Stage hands, projectionists.....	11-98	26-63	21-27	0-37	-	6-21	6-79
Mechanical engineers.....	11-99	24-95	22-68	-	-	-	-
Mining engineers.....	12-07	20-55	26-75	-	-	-	-
Carders and drawing frame tenders—Textiles (Mfg.)...	12-2	64-5	18-24	37-25	9-7	16-4	13-45
Finishers and calenderers—Textiles (Mfg.).....	12-3	56-1	18-07	43-56	9-3	13-4	10-86
Bookbinders.....	12-3	41-8	26-28	-	-	36-5	13-92
Mattress makers—Miscellaneous Products (Mfg.).....	12-8	50-5	19-65	20-0	8-	13-4	11-91
Pressmen and plate printers—Printing, Publishing, Bookbinding.....	12-91	34-07	18-03	-	-	1-07	10-71

TABLE 18. Occupations arranged in ascending order of percentage of male wage-earners not at work June 1, 1931, showing percentage of males losing any time and weeks lost per male losing time, percentage of occupation female and juvenile, percentage of females not at work June 1 and weeks lost per juvenile, Canada, year ended June 1, 1931—Con.

Occupation	P.C. of Male Wage-Earners		Weeks Lost per Male Wage-Earner Losing Time	P.C. of Occupation Female	P.C. of Female Wage-Earners Not at Work June 1	P.C. of Male Wage-Earners Juvenile	Weeks Lost per Juvenile
	Not at Work June 1	Losing Time					
Millers.....	12-99	27-55	19-63	-	-	2-53	6-71
Washing and drying machine operators—Laundering; Cleaning, Dyeing, and Pressing.....	13-1	30-1	23-96	50-0	9-1	6-8	7-24
Tanners—Leather and Leather Products (Mfg.).....	13-2	46-2	18-83	-	-	4-8	14-00
Porters—Railway Transportation.....	13-30	30-05	20-07	-	-	2-38	10-08
Foremen and overseers—Coal Mining.....	13-4	34-3	15-63	-	-	-	-
Brush and broom makers—Miscellaneous Products (Mfg.).....	13-4	45-1	20-20	17-8	6-7	11-9	0-67
Bakers' apprentices.....	13-45	33-81	23-14	2-49	11-	88-07	7-55
Managers—Logging.....	13-6	20-6	20-30	-	-	-	-
Barbers, hairdressers, manicurists.....	13-62	29-45	23-44	33-20	11-24	1-60	5-77
Boot and shoe makers' apprentices—Leather and Leather Products (Mfg.).....	13-7	43-3	24-16	-	-	86-6	9-07
Jewellers' and watchmakers' apprentices—Precious Metals and Electroplate (Mfg.).....	13-8	29-5	20-25	0-7	-	72-1	6-07
Other—Other Transportation and Communication.....	13-8	29-6	24-30	4-2	-	48-3	9-08
Other—Leather and Leather Products (Mfg.).....	13-81	53-77	18-68	30-51	17-8	16-53	12-49
Processmen and furnacemen—Chemical and Allied Products (Mfg.).....	14-0	41-6	15-90	0-2	-	1-0	14-22
Ushers—Recreational Service.....	14-0	33-7	24-98	29-3	16-7	42-9	8-87
Other—Textile Goods and Wearing Apparel (Mfg.).....	14-2	39-3	21-15	57-14	14-07	11-1	9-85
Oilers of machinery—Electric Light and Power.....	14-22	51-61	17-40	-	-	6-88	12-28
Bookbinders—Printing, Publishing, Bookbinding.....	14-30	35-7	10-78	58-70	13-62	1-0	10-00
Other—Miscellaneous Products (Mfg.).....	14-34	38-40	21-65	34-49	12-8	20-79	8-27
Artists, art teachers, sculptors, painters.....	14-42	30-63	22-46	23-85	10-6	4-61	6-67
Other—Textiles (Mfg.).....	14-49	52-28	10-00	65-42	8-88	25-57	11-58
Knitters—Textile Goods and Wearing Apparel (Mfg.).....	14-54	53-68	18-37	56-16	8-48	23-01	10-41
Telegraph operators.....	14-58	24-31	23-49	11-04	9-7	2-90	10-61
Spoolers, warpers, and beamers—Textiles (Mfg.).....	14-7	61-8	17-32	82-52	11-38	36-0	11-20
Weavers—Textiles (Mfg.).....	14-73	54-53	19-32	45-89	10-08	17-23	10-53
Barbers and hairdressers' apprentices.....	14-8	32-7	28-13	44-0	14-3	82-7	9-27
Paper box, bag, and envelope makers—Pulp, Paper, and Paper Products (Mfg.).....	14-81	45-3	18-24	65-88	11-03	20-0	10-41
Window cleaners.....	14-9	37-0	22-02	-	-	4-9	10-86
Machinists' apprentices—Metal Products (Mfg.).....	15-01	48-01	19-93	-	-	61-84	9-69
Linemen, cablemen—Other Transportation and Communication.....	15-08	37-47	18-16	-	-	3-07	12-71
Waiters.....	15-10	34-25	22-94	53-31	13-64	6-73	9-61
Lime, plaster, and cement makers—Non-Metallic Mineral Products (Mfg.).....	15-2	56-7	21-44	-	-	3-0	9-80
Yardmen, n.e.s.—Railway Transportation.....	15-22	37-20	16-72	-	-	2-61	16-95
Other—Pulp, Paper, and Paper Products (Mfg.).....	15-28	54-17	15-88	21-06	18-0	12-06	11-10
Truck drivers.....	15-32	43-07	21-36	-	-	6-98	14-35
Farm labourers.....	15-38	33-54	24-70	0-82	11-57	19-13	6-50
Chauffeurs and bus drivers.....	15-65	35-51	23-14	0-05	17-	4-11	15-11
Butchers and slaughterers—Animal Foods (Mfg.).....	15-73	35-67	22-10	0-03	-	9-10	8-75
Spinners—Textiles (Mfg.).....	15-78	62-83	19-34	58-18	11-03	28-89	11-61
Process engravers—Printing, Publishing, Bookbinding. Cleaners and dyers—Laundering; Cleaning, Dyeing, and Pressing.....	15-8	32-3	16-15	0-2	-	13-2	4-94
Tent, sail, awning makers—Textile Goods and Wearing Apparel (Mfg.).....	15-87	37-86	22-39	22-80	11-3	13-10	7-88
Switchmen, signalmen, flagmen—Railway Transportation.....	15-9	52-2	23-11	19-1	19-	5-1	14-50
Bakers (Mfg.).....	16-12	37-92	21-00	-	-	1-03	15-67
Teamsters, draymen, carriage drivers.....	16-13	35-40	22-30	3-02	8-2	5-37	7-89
Other—Rubber Products (Mfg.).....	16-14	44-50	21-04	-	-	8-16	11-83
Confectionery and biscuit makers (Mfg.).....	16-26	66-62	16-87	30-70	14-0	10-08	14-03
Showmen and sportsmen—Recreational Service.....	16-40	48-00	16-02	46-73	16-00	18-53	12-30
Seamen, sailors, and deckhands.....	16-5	30-5	24-34	1-5	9-	10-8	6-73
Machine tenders, n.e.s.—Printing, Publishing, Bookbinding.....	16-66	32-98	24-75	-	-	13-00	11-05
Packers, wrappers, labellers—Warehousing and Storage.....	16-67	40-05	20-12	35-18	11-3	44-50	8-01
Potters—glazers and decorators—Non-Metallic Mineral Products (Mfg.).....	16-70	50-75	10-35	64-09	13-20	20-00	11-79
Machine operatives, n.e.s.—Pulp, Paper, and Paper Products (Mfg.).....	16-8	58-9	17-29	8-4	28-	9-1	11-67
Boiler firemen—Electric Light and Power.....	17-15	56-60	16-29	2-63	11-	6-09	10-80
Vulcanizers—Rubber Products (Mfg.).....	17-30	45-70	19-56	-	-	2-37	13-67
Blacksmiths' apprentices—Metal Products (Mfg.).....	17-4	44-6	23-40	-	-	10-5	11-32
Captains, mates, and pilots—Water Transportation.....	17-4	38-7	25-17	-	-	62-5	8-97
Box, basket, and packing case makers—Wood Products (Mfg.).....	17-49	42-49	22-21	-	-	1-20	13-67
Hawkers and pedlars.....	17-5	56-8	20-38	15-63	22-0	21-5	12-39
Other—Drinks and Beverages (Mfg.).....	17-5	41-4	25-71	0-6	-	14-1	14-07
Tire builders and tube makers—Rubber Products (Mfg.).....	17-6	46-7	19-78	12-4	13-	7-5	9-33
Wood carvers and picture frame makers—Wood Products (Mfg.).....	17-67	67-02	17-85	9-71	0-2	3-56	13-07
Aviators.....	17-8	48-1	19-56	1-0	25-	10-7	5-64
		25-7	28-78	-	-	3-0	17-56

TABLE 18. Occupations arranged in ascending order of percentage of male wage-earners not at work June 1, 1931, showing percentage of males losing any time and weeks lost per male losing time, percentage of occupation female and juvenile, percentage of females not at work June 1 and weeks lost per juvenile, Canada, year ended June 1, 1931—Con.

Occupation	P.C. of Male Wage-Earners		Weeks Lost per Male Wage-Earner Losing Time	P.C. of Occupation Female	P.C. of Females Not at Work June 1	P.C. of Male Wage-Earners Juvenile	Weeks Lost per Juvenile
	Not at Work June 1	Losing Time					
Jewellers, watchmakers, repairers—Precious Metals and Electroplate (Mfg.).....	17.91	36.39	23.24	5.49	11.7	1.41	12.19
Curriers, leather dressers, finishers—Leather and Leather Products (Mfg.).....	18.0	55.3	18.55	16.1	18.5	11.4	6.75
Electricians and wiremen—Building and Construction.	18.07	40.59	20.32	-	-	1.65	12.40
Furriers—Metal Products (Mfg.).....	18.17	55.08	19.85	-	-	2.73	18.35
Operatives—sugar refinery (Mfg.).....	18.2	53.2	17.28	8.9	20.0	6.5	9.00
Glove makers—Leather and Leather Products (Mfg.).....	18.2	56.8	20.23	63.2	10.0	15.3	12.35
Japaners, enamellers, lacquerers—Metal Products (Mfg.).....	18.3	64.8	17.99	13.6	13	9.5	10.68
Foremen and overseers—Logging.....	18.6	48.4	18.05	-	-	0.1	-
Stationary engineers, n.e.s.—Electric Light and Power.....	18.80	41.80	21.95	-	-	0.77	12.67
Coopers—Wood Products (Mfg.).....	18.88	50.00	20.66	-	-	4.36	10.87
Cabinet and furniture makers' apprentices—Wood Products (Mfg.).....	18.9	47.5	20.04	-	-	85.3	9.25
Mechanics, n.e.s.—Metal Products (Mfg.).....	18.92	45.87	22.19	-	-	7.07	12.78
Other—Precious Metals and Electroplate (Mfg.).....	19.0	50.0	20.98	33.0	23	10.3	8.08
Other—Recreational Service.....	19.07	44.37	26.58	6.14	5	38.23	15.67
Boilermakers' apprentices—Metal Products (Mfg.).....	19.1	52.5	21.28	-	-	61.7	14.30
Patternmakers—Metal Products (Mfg.).....	19.38	54.70	19.03	-	-	6.70	6.71
Wood turners, planers—wood machinists—Wood Products (Mfg.).....	19.40	59.32	19.03	3.61	12	11.38	12.02
Electricians' and wiremen's apprentices—Building and Construction.....	19.46	46.36	22.89	-	-	67.25	10.28
Armature winders and coil insulators—Electrical Apparatus (Mfg.).....	19.5	64.3	18.35	39.5	18.3	6.8	15.25
Machinists—Metal Products (Mfg.).....	19.50	53.77	20.75	-	-	0.95	12.83
Other—Non-Metallic Mineral Products (Mfg.).....	19.60	50.98	21.01	13.16	13.3	10.91	13.43
Boot and shoe repairers—Leather and Leather Products (Mfg.).....	19.68	43.08	26.50	-	-	1.95	9.34
Electric and oxy-acetylene welders—Metal Products (Mfg.).....	19.90	58.52	20.72	-	-	5.33	15.90
Machine operators—boots and shoes (Mfg.).....	19.91	59.09	20.90	36.10	13.99	16.44	10.98
Carpenters' apprentices—Building and Construction.....	19.91	52.03	24.19	-	-	72.29	12.80
Battery makers and repairers—Electrical Apparatus (Mfg.).....	20.0	43.6	21.32	1.6	-	10.7	16.08
Tailors' apprentices—Textile Goods and Wearing Apparel (Mfg.).....	20.1	46.4	23.52	20.1	18	84.0	10.90
Instrument and appliance assemblers—Electrical Apparatus (Mfg.).....	20.17	47.28	20.67	24.41	14.5	15.89	14.70
Brick and tile moulders and makers—Non-Metallic Mineral Products (Mfg.).....	20.3	71.9	21.83	-	-	7.5	18.94
Painters' apprentices—Building and Construction.....	20.5	54.1	26.19	-	-	83.2	13.79
Sheet metal workers' apprentices—Building and Construction.....	20.6	50.5	23.70	-	-	75.0	12.38
Other—Other Mining.....	20.64	47.11	22.03	-	-	3.8	17.19
Hoistmen, crane-men, derrickmen—Electric Light and Power.....	20.64	59.68	20.31	-	-	1.42	17.45
Stone cutters, dressers and carvers—Non-Metallic Mineral Products (Mfg.).....	20.70	59.90	19.63	-	-	6.11	9.42
Sawyers—Wood Products (Mfg.).....	20.74	65.61	20.64	-	-	5.13	14.10
Breakers, pickers, and wood sorters—Textiles (Mfg.).....	20.8	89.4	17.92	30.7	9	15.3	15.86
Engineering officers—Water Transportation.....	21.09	49.60	22.54	-	-	0.67	19.00
Canners—fruit and vegetable (Mfg.).....	21.1	44.4	21.14	55.24	25.6	12.3	17.19
Paper makers—Pulp, Paper, and Paper Products (Mfg.).....	21.23	60.83	16.96	-	-	2.24	15.70
Tool makers, die cutters and sinkers—Metal Products (Mfg.).....	21.34	61.23	22.14	-	-	1.29	15.76
Plumbers' apprentices—Building and Construction.....	21.30	47.22	23.11	-	-	66.61	10.28
Millwrights—Metal Products (Mfg.).....	21.42	55.29	21.34	-	-	0.18	17.00
Canoe and boat builders and repairers—Wood Products (Mfg.).....	21.7	54.9	22.52	-	-	12.2	13.88
Platers—Precious Metals and Electroplate (Mfg.).....	21.7	57.2	20.64	0.9	-	11.3	15.12
Cigarette makers—Tobacco Products (Mfg.).....	22	63	16.41	73	10	7	23.50
Cutters—Textile Goods and Wearing Apparel (Mfg.).....	22.06	56.47	20.54	16.24	11.6	14.31	10.68
Other—Unspecified.....	22.19	43.94	26.59	19.97	17.5	23.17	10.68
Other—Electrical Apparatus (Mfg.).....	22.2	52.0	21.23	53.42	11.0	17.5	14.14
Other—Wood Products (Mfg.).....	22.26	61.51	20.71	3.85	12.4	10.39	12.21
Cutters—Leather and Leather Products (Mfg.).....	22.47	60.34	20.45	3.59	20	12.91	11.55
Finishers and polishers—Wood Products (Mfg.).....	22.50	59.55	20.44	1.98	15	6.38	10.93
Pressworkers and stampers—Metal Products (Mfg.).....	22.80	69.5	21.90	14.40	18.8	8.5	17.47
Coppersmiths—Metal Products (Mfg.).....	22.9	50.3	18.33	-	-	3.9	16.43
Cabinet and furniture makers—Wood Products (Mfg.).....	22.91	56.88	20.52	-	-	2.13	9.58
Purser and stewards—Water Transportation.....	23.08	49.7	22.77	16.82	7.6	8.8	16.19
Fish canners and curers—Animal Foods (Mfg.).....	23.62	56.82	26.69	55.07	36.81	16.65	12.10
Inspectors, graders, and scalers—Wood Products (Mfg.).....	23.66	58.11	20.51	-	-	1.31	19.63
Wire drawers, makers, and weavers—Metal Products (Mfg.).....	23.8	65.1	20.00	8.4	14	9.6	15.13
Machine tenders, n.e.s.—Metal Products (Mfg.).....	23.97	70.25	23.04	13.00	12.5	11.40	16.80
Brakemen—Railway Transportation.....	24.28	48.55	22.02	-	-	0.14	16.83

TABLE 18. Occupations arranged in ascending order of percentage of male wage-earners not at work June 1, 1931, showing percentage of males losing any time and weeks lost per male losing time, percentage of occupation female and juvenile, percentage of females not at work June 1 and weeks lost per juvenile, Canada, year ended June 1, 1931—Con.

Occupation	P.C. of Male Wage-Earners		Weeks Lost per Male Wage-Earner Losing Time	P.C. of Occupation Female	P.C. of Females Not at Work June 1	P.C. of Male Wage-Earners Juvenile	Weeks Lost per Juvenile
	Not at Work June 1	Losing Time					
Labourers—Mines and Quarries.....	24.20	64.19	22.27	-	-	7.35	17.78
Other—Building and Construction.....	24.4	59.0	22.67	-	-	5.4	12.27
Boilermakers, platers, and riveters—Metal Products (Mfg.).....	24.50	58.95	21.63	-	-	0.21	21.20
Blacksmiths, hammermen, and forgers—Metal Products (Mfg.).....	24.58	55.48	22.70	-	-	0.33	9.84
Sheet metal workers and tinsmiths—Building and Construction.....	24.58	60.79	21.78	1.54	25.	1.26	13.22
Quarriers and rock drillers—Other Mining.....	24.67	65.98	21.15	-	-	3.54	17.58
Cigar makers—Tobacco Products (Mfg.).....	24.9	73.7	22.86	52.11	11.0	7.9	12.29
Furriers—fur cutters, dressers, sewers—Furs and Fur Goods (Mfg.).....	24.93	60.20	21.75	34.84	24.20	14.38	13.76
Cooks.....	25.09	45.11	26.14	28.00	8.05	2.16	12.38
Glass blowers—Non-Metallic Mineral Products (Mfg.).....	25.8	70.6	26.10	3.5	43.	4.6	18.11
Plasterers and lathers' apprentices—Building and Construction.....	25.8	60.0	24.24	-	-	71.7	15.71
Sewers, seamstresses—not in factory (Mfg.).....	26.5	55.3	23.39	92.78	12.40	21.8	10.10
Goldsmiths and silversmiths—Precious Metals and Electroplate (Mfg.).....	26.5	55.4	20.99	5.8	19.	8.5	10.86
Trunk, belt, and bag makers—Leather and Leather Products (Mfg.).....	26.6	67.7	20.99	13.1	14.	9.4	18.89
Plumbers, stonemasons, and gas fitters—Building and Construction.....	26.69	58.30	22.15	-	-	0.9	13.41
Filters and grinders—Metal Products (Mfg.).....	26.70	70.97	23.32	-	-	2.96	17.21
Moulders' apprentices—Metal Products (Mfg.).....	26.8	60.9	21.63	-	-	72.8	12.95
Firemen and trimmers—on ships.....	27.22	62.87	23.09	-	-	8.50	14.09
Musicians and music teachers.....	27.32	41.19	28.80	34.75	8.85	4.64	14.30
Fitters, assemblers, and erectors—Metal Products (Mfg.).....	27.45	68.70	23.37	2.87	13.8	6.48	12.78
Miners—Other Mining.....	27.50	53.16	24.68	-	-	1.99	17.98
Other—Metal Products (Mfg.).....	27.58	64.99	23.30	3.82	11.0	11.57	12.54
Rolling mill men, n.e.s.—Metal Products (Mfg.).....	27.6	70.7	22.73	-	-	1.7	30.14
Upholsterers' apprentices—Wood Products (Mfg.).....	27.8	56.6	23.75	3.6	-	75.9	14.81
Locomotive firemen—Railway Transportation.....	27.86	50.42	23.02	-	-	0.22	15.49
Fishermen.....	28.20	47.81	23.80	0.44	31.	11.27	10.58
Brick and stone masons' apprentices—Building and Construction.....	28.4	65.3	26.54	-	-	66.6	16.62
Painters, decorators, and glaziers—Building and Construction.....	28.44	68.78	24.44	-	-	1.54	18.88
Hunters and trappers.....	28.72	46.47	24.59	0.10	67.	6.79	11.38
Polishers and buffers—Metal Products (Mfg.).....	28.75	73.90	23.21	3.15	14.	5.59	16.05
Rubber shoe makers—Rubber Products (Mfg.).....	28.80	77.08	18.95	33.01	17.2	11.00	16.86
Other—Coal Mining.....	29.18	79.94	22.12	-	-	7.29	21.14
Harness and saddlery makers—Leather Products (Mfg.).....	29.9	52.4	26.97	0.1	-	2.1	5.47
Ironers and pressers—Laundering; Cleaning, Dyeing, and Pressing.....	30.37	63.32	22.99	38.64	11.30	11.01	12.52
Carriage and wagon builders and repairers—Wood Products (Mfg.).....	30.8	61.7	25.54	-	-	3.9	9.38
Tailors and tailoresses.....	30.84	59.35	24.03	16.76	21.83	0.58	9.20
Upholsterers—Wood Products (Mfg.).....	31.28	66.36	24.29	5.36	33.6	2.74	15.61
Hat and cap makers.....	31.5	62.3	21.80	43.58	24.9	11.5	14.51
Moulders, coremakers, and casters—Metal Products (Mfg.).....	31.98	72.89	24.67	0.86	31.	0.23	15.22
Roofers (not metal) and slaters—Building and Construction.....	32.5	74.2	25.80	-	-	3.6	17.96
Carpenters—Building and Construction.....	32.61	69.40	24.55	-	-	0.58	14.32
Sewers, sewing machinists—shop factory—Textile Goods and Wearing Apparel (Mfg.).....	32.94	68.23	22.52	80.46	15.90	17.02	14.20
Milliners.....	33.	67.	20.91	98.37	19.71	-	-
Oil drillers—Other Mining.....	34.4	54.4	25.06	-	-	1.5	8.00
Musical instrument makers.....	36.4	58.9	28.94	4.0	31.	3.1	8.63
Actors and actresses.....	36.8	49.5	28.41	45.9	37.9	4.7	19.56
Structural iron workers and steel erectors—Building and Construction.....	37.08	75.66	24.39	-	-	1.75	12.54
Longshoremen and stevedores—Water Transportation.....	37.65	78.88	24.74	-	-	1.64	24.68
Cement finishers—Building and Construction.....	38.0	81.1	25.65	-	-	0.5	12.00
Labourers and unskilled workers.....	38.28	69.20	27.43	2.68	15.65	10.59	20.82
Haulage workers, drivers, cagers—Coal Mining.....	39.65	88.86	24.13	-	-	21.80	23.53
Brick and stone masons—Building and Construction.....	41.92	80.10	27.70	-	-	0.63	16.02
Labourers—Coal Mining.....	41.93	80.69	25.59	-	-	13.77	23.02
Lumbermen.....	43.52	70.04	24.95	-	-	9.41	17.83
Plasterers and lathers—Building and Construction.....	48.29	83.16	27.75	-	-	1.35	21.05
Miners—Coal Mining.....	52.07	88.77	25.63	-	-	2.94	23.45
Dressmakers.....	-	-	-	100.00	12.02	-	-
Dressmakers' apprentices.....	-	-	-	100.00	10.7	-	-
Milliners' apprentices.....	-	-	-	100.00	21.5	-	-
Nurses—graduate.....	-	-	-	100.00	10.46	-	-
Nurses—in training.....	-	-	-	100.00	2.08	-	-

TABLE 19. Comparison of growth or decline in employment between 1931 and 1936 with unemployment recorded, for selected industries, Prairie Provinces, 1931 and 1936

No.	Industry ¹	Total Wage-Earners		
		No.		P.C. Change
		June 1, 1931	June 1, 1936	
1	Industries showing increase in employment.....	231,355	260,867	12.76
2	Gold mining and milling.....	247	1,393	463.97
3	Transportation, n.e.s.....	209	362	73.21
4	Copper mining and milling.....	1,092	1,474	34.86
5	Air transportation.....	182	256	40.66
6	Slaughtering and meat packing (Mfg.).....	2,774	3,659	42.72
7	Forestry and logging.....	1,451	2,158	48.73
8	Police service (Federal and Provincial).....	892	1,205	35.09
9	Butter and cheese factories, retail dairies.....	2,821	3,795	34.53
10	Mattresses (Mfg.).....	202	259	28.22
11	Taxis, livery, and bus service.....	732	939	28.28
12	Private domestic service.....	29,852	38,537	29.09
13	Dyeing, cleaning, and pressing.....	671	777	15.80
14	Art and music (including commercial art).....	476	630	32.35
15	Coal mining.....	9,688	9,464	-2.31
16	Boxes, baskets, and barrels (Mfg.).....	323	383	18.58
17	Lodging and boarding houses.....	1,953	2,474	26.68
18	Fur goods (Mfg. and Retail Trade).....	542	595	9.78
19	Agriculture.....	83,800	92,816	10.68
20	Clothing manufacturing and custom tailoring.....	2,421	2,680	10.70
21	Theatres and theatre agencies.....	977	1,113	13.92
22	Saw and planing mills.....	2,671	2,830	5.95
23	Federal and Provincial government, n.e.s.....	6,951	8,058	15.93
24	Municipal government, n.e.s.....	5,797	6,719	15.90
25	Books and stationery (Retail and Wholesale Trade).....	792	903	14.02
26	Cartage, trucking, and hauling service.....	3,022	3,457	14.39
27	Drugs (Retail and Wholesale Trade).....	1,533	1,673	9.13
28	Tobacco (Retail and Wholesale Trade).....	448	504	12.50
29	Storage.....	5,939	6,394	7.66
30	Aerated and mineral waters (Mfg.).....	189	208	10.05
31	Postal service.....	4,185	4,539	10.85
32	Billiard halls and sporting clubs.....	1,396	1,587	13.68
33	Potteries, earthenware, and china (Mfg.).....	136	132	-2.94
34	Oil and gas wells, processing, retail dealing.....	3,537	3,479	-1.59
35	Boots and shoes (Retail Trade).....	353	358	1.42
36	Hosiery and knitted goods (Mfg.).....	166	155	-6.63
37	Hardware (Retail and Wholesale Trade).....	4,171	4,233	1.49
38	Literature, journalism, and library service.....	165	177	7.27
39	General and departmental stores.....	14,548	15,552	6.17
40	Barber and hairdressing shops.....	1,822	1,976	8.39
41	Scientific and professional equipment (Mfg.).....	164	163	-0.61
42	Candy and confectionery (Retail Trade).....	1,005	1,023	1.79
43	Groceries (Retail and Wholesale Trade).....	5,685	5,709	0.42
44	Meat, poultry, and fish (Retail Trade).....	1,822	1,819	-0.16
45	Education.....	22,571	23,017	1.98
46	Fire department.....	800	823	2.88
47	Industries showing decrease in employment.....	171,991	141,743	-17.59
48	Other and unspecified mining.....	250	201	-19.60
49	Automobile manufacturing, dealing, repairing, garages.....	9,885	9,342	-5.49
50	Water service.....	497	478	-3.82
51	Coal and wood (Retail Trade).....	1,025	1,241	21.07
52	Police (Municipal).....	985	982	-0.30
53	Flour and grain milling.....	1,845	1,706	-7.53
54	Liquors, beverages (not aerated waters) (Mfg.).....	1,118	1,067	-4.56
55	Optical goods (Retail Trade).....	108	101	-6.48
56	Social welfare and charity organizations.....	1,007	990	-1.69
57	Bakeries.....	2,207	2,150	-2.58
58	Electric railways.....	2,258	2,142	-5.14
59	Furniture and house furnishings (Retail Trade).....	768	707	-7.94
60	National defence.....	1,020	977	-4.22
61	Clothing and dry goods (Retail and Wholesale Trade).....	3,130	2,800	-10.54
62	Steam railways.....	47,377	42,101	-11.14
63	Furniture (including upholstering) (Mfg.).....	526	446	-15.21
64	Accountancy and actuarial practice.....	505	471	-6.73
65	Boot and shoe repairing.....	307	315	2.61
66	Iron foundries.....	1,039	879	-15.40
67	Hotels, restaurants, and taverns.....	14,497	12,942	-10.73
68	Wood products, n.e.s. (Mfg.).....	235	225	-4.26
69	Printing, publishing, and bookbinding.....	4,903	4,398	-11.38
70	Paper products—boxes, bags, stationery (Mfg.).....	549	467	-14.94
71	Photographers' shops.....	285	246	-13.68
72	Advertising agencies.....	350	311	-11.14
73	Business service, n.e.s.....	362	326	-9.94
74	Brass and copper products (Mfg.).....	155	134	-13.55
75	Blacksmithing.....	755	608	-19.47
76	Liquors and beverages (Retail Trade).....	582	516	-11.34
77	Personal service, n.e.s.....	842	732	-13.06

¹ n.e.s.—not elsewhere specified.

² The industries listed are those with 100 or more wage-earners at work on June 1, 1931, in the three Prairie Provinces combined.

³ Due mainly to differences in classification at the two censuses, the 1931 and 1936 figures shown for these industries are not comparable.

TABLE 19. Comparison of growth or decline in employment between 1931 and 1936 with unemployment recorded, for selected industries, Prairie Provinces, 1931 and 1936

Wage-Earners at Work on Census Date			P.C. of Total Wage-Earners Reporting No Job		Average No. of Weeks Lost by All Wage-Earners		No.
No.		P.C. Change	June 1, 1931	June 1, 1936	1931	1936	
June 1, 1931	June 1, 1936						
192,064	222,941	16.08	14.16	11.13	8.29	14.33	1
175	1,091	523.43	25.10	15.08	17.55	15.92	2
185	310	70.81	10.53	8.29	7.00	11.31	3
908	1,411	55.40	14.27	2.92	11.21	7.20	4
156	228	46.15	13.19	6.64	6.36	8.42	5
2,419	3,454	42.79	11.30	9.14	7.08	9.57	6
849	1,170	37.81	38.94	39.90	16.78	25.97	7
865	1,157	33.70	2.58	2.74	1.58	1.82	8
2,021	3,448	31.50	5.07	6.90	4.60	9.57	9
167	217	29.94	12.87	11.20	9.68	10.72	10
582	754	29.55	18.99	16.08	10.44	14.66	11
27,035	34,934	29.22	8.52	7.24	6.59	10.71	12
572	707	23.00	11.62	7.69	8.74	12.63	13
367	453	23.43	20.80	23.65	11.05	20.81	14
4,330	5,329	23.07	18.09	16.90	21.00	22.76	15
256	313	22.27	16.10	13.32	14.16	15.64	16
1,778	2,173	22.22	7.89	10.27	5.19	8.25	17
427	507	18.74	17.34	9.58	11.79	14.73	18
66,383	78,111	17.67	20.06	13.96	10.18	19.04	19
1,884	2,164	14.89	17.51	9.59	12.75	15.06	20
823	945	14.82	13.20	12.67	7.16	10.10	21
2,063	2,331	12.90	19.36	13.58	13.24	18.94	22
6,596	7,429	12.63	4.03	5.49	2.92	5.31	23
4,728	5,320	12.52	16.51	17.03	9.81	13.58	24
710	795	11.97	9.34	9.08	4.71	7.97	25
2,214	2,475	11.79	24.35	24.73	11.90	19.52	26
1,337	1,486	11.14	11.15	8.13	5.23	9.01	27
410	454	10.73	7.59	7.14	3.91	5.67	28
5,369	5,924	10.34	7.54	6.27	3.39	4.27	29
171	187	9.36	9.52	8.65	8.38	14.34	30
4,092	4,443	8.58	1.48	2.13	1.07	2.58	31
1,108	1,265	8.30	14.83	14.11	11.59	19.41	32
408	416	7.41	14.71	6.82	8.34	16.60	33
2,823	3,024	7.12	17.77	9.97	8.40	12.54	34
288	308	6.94	16.71	14.13	8.75	12.54	35
119	127	6.72	21.08	12.90	15.05	14.09	36
3,532	3,748	6.12	13.19	9.05	5.89	8.46	37
157	166	5.73	3.03	3.95	2.24	7.30	38
12,552	13,213	5.27	11.97	10.64	6.54	10.59	39
1,492	1,566	4.96	10.40	17.15	9.01	15.93	40
144	150	4.17	10.98	4.91	6.12	6.21	41
855	874	2.22	13.03	11.53	8.74	13.08	42
4,800	4,873	1.52	14.16	11.89	6.89	11.07	43
1,456	1,471	1.03	18.77	15.72	9.90	12.40	44
21,312	21,525	1.00	4.52	4.64	2.65	4.47	45
780	789	0.38	1.00	1.09	0.98	1.19	46
137,741	114,220	-17.08	17.00	15.30	10.14	14.47	47
110	109	-0.91	50.80	32.34	22.54	23.36	48
7,645	7,493	-2.00	20.54	17.01	10.93	16.06	49
409	400	-2.20	14.29	12.76	8.96	10.11	50
750	731	-2.53	23.51	33.69	10.70	20.05	51
946	921	-2.04	3.55	3.36	1.85	3.49	52
1,506	1,463	-2.89	10.51	9.50	7.59	10.21	53
958	927	-4.24	9.21	9.56	8.42	10.38	54
101	96	-4.95	5.56	2.97	3.61	4.84	55
962	911	-5.30	3.48	4.04	3.84	6.46	56
1,856	1,743	-6.09	13.41	15.20	7.53	10.93	57
2,023	1,898	-6.19	7.22	6.53	5.09	6.15	58
657	616	-6.24	12.50	6.34	6.68	8.63	59
988	926	-6.28	2.84	3.89	1.74	5.03	60
2,528	2,356	-6.80	16.71	12.68	8.15	12.46	61
39,816	36,733	-7.75	11.20	7.30	8.09	12.51	62
341	313	-8.21	31.37	21.62	16.73	18.73	63
427	387	-9.37	14.40	14.85	5.87	10.50	64
233	210	-9.87	23.13	31.11	11.53	19.93	65
724	650	-10.22	25.02	29.71	14.70	17.74	66
12,191	10,874	-10.80	14.09	13.24	9.08	13.28	67
212	189	-10.85	9.36	10.67	15.14	19.11	68
4,387	3,811	-13.13	9.03	9.78	5.21	9.81	69
449	387	-13.81	14.57	11.35	9.89	12.24	70
224	193	-13.84	19.30	17.48	9.41	14.40	71
304	261	-14.14	11.14	13.50	5.46	13.04	72
301	257	-14.62	14.36	18.71	7.34	13.21	73
127	108	-14.98	12.90	14.83	8.80	15.50	74
489	412	-15.75	32.05	27.80	15.81	21.68	75
566	467	-16.91	4.30	7.17	1.58	4.70	76
728	609	-16.35	12.00	13.66	8.68	15.07	77

TABLE 19. Comparison of growth or decline in employment between 1931 and 1936 with unemployment recorded, for selected industries, Prairie Provinces, 1931 and 1936—Con.

No.	Industry ¹	Total Wage-Earners		
		No.		P.C. Change
		June 1, 1931	June 1, 1936	
Industries showing decrease in employment—Con.				
1	Electric light and power production and distribution.....	2,835	2,167	-17.76
2	Telephone systems.....	4,045	3,407	-15.77
3	Building and structures.....	17,484	14,395	-18.24
4	Insurance and real estate.....	6,592	5,608	-14.93
5	Law.....	1,523	1,259	-17.33
6	Investment and loans.....	2,096	1,656	-20.99
7	Fruits and vegetables (Retail Trade).....	225	176	-21.78
8	Fishing.....	696	614	-11.78
9	Religion.....	3,495	2,808	-19.66
10	Glass and its products (Mfg.).....	338	274	-18.93
11	Iron products, n.e.s. (including smelting and refining).....	1,686	1,260	-25.27
12	Associations—industrial and trade.....	269	213	-20.82
13	Laundries: laundering.....	1,785	1,450	-18.77
14	Textile products, n.e.s. (Mfg.).....	150	120	-20.00
15	Banking.....	5,878	4,475	-23.87
16	Jewelry (Retail Trade) and watch repairing.....	556	419	-24.64
17	Biscuits and confectionery (Mfg.).....	774	608	-21.45
18	Pulp and paper.....	433	326	-24.71
19	Lime, plaster, cement, artificial stone (Mfg.).....	441	307	-30.39
20	Chemical products, n.e.s. (Mfg.).....	368	272	-26.09
21	Water transportation.....	772	529	-31.48
22	Non-metallic mineral products, n.e.s. (Mfg.).....	195	119	-38.97
23	Musical instruments (Retail Trade).....	504	325	-35.52
24	Electrical apparatus manufacturing, retail dealing, and repair.....	1,450	993	-31.80
25	Sheet metal products (Mfg.).....	356	229	-35.67
26	Boilers, engines, and machinery (Mfg.).....	1,450	836	-42.34
27	Vegetable food products, n.e.s. (Mfg.).....	259	159	-38.61
28	Bricks and tile (Mfg.).....	441	276	-37.41
29	Quarries, gravel pits; salt wells.....	733	419	-42.84
30	Monumental stone and marble (Mfg.).....	280	185	-33.93
31	Applied sciences.....	422	231	-45.26
32	Construction, n.e.s.....	14,225	5,727	-59.74
Industries not classified²				
33	Agricultural implements and machinery (Mfg.).....	53,371	40,788	-
34	Brooms, brushes, and mops (Mfg.).....	1,871	703	-
35	Custom and repair, n.e.s.....	124	63	-
36	Flowers and seeds—florists (Retail Trade).....	307	666	-
37	Harness and saddlery (Mfg.).....	211	187	-
38	Health.....	188	139	-
39	Hunting and trapping.....	8,221	9,985	-
40	Lithographing and engraving.....	285	47	-
41	Lumber (Wholesale Trade).....	206	117	-
42	Medicinal preparations (Mfg.).....	504	392	-
43	Miscellaneous products, n.e.s. (Mfg.).....	254	45	-
44	Paints, pigments, and varnishes (Mfg.).....	492	261	-
45	Retail dealing, n.e.s.....	236	197	-
46	Rubber products (Mfg.).....	3,361	6,370	-
47	Soaps and toilet preparations (Mfg.).....	214	56	-
48	Unspecified industries.....	187	164	-
49	Wholesale dealing, n.e.s.....	27,978	10,079	-
50		8,732	11,317	-
51	Industries with 100 or more wage-earners at work on June 1, 1931.....	456,720	443,398	-
52	Industries with less than 100 wage-earners at work on June 1, 1931.....	2,008	2,059	-
53	All industries.....	458,728	445,487	-2.80

TABLE 19. Comparison of growth or decline in employment between 1931 and 1936 with unemployment recorded, for selected industries, Prairie Provinces, 1931 and 1936—Con.

Wage-Earners at Work on Census Date			P.C. of Total Wage-Earners Reporting No Job		Average No. of Weeks Lost by All Wage-Earners		No.
No.		P.C. Change					
June 1, 1931	June 1, 1936			June 1, 1931	June 1, 1936	1931	1936
2,273	1,897	-16.44	11.35	8.91	6.32	7.01	1
3,651	3,043	-16.55	7.90	6.90	4.16	7.56	2
5,880	7,363	-17.08	46.49	44.25	23.06	34.02	3
6,035	4,990	-17.32	7.48	8.83	3.72	6.60	4
1,268	1,046	-17.51	14.90	13.95	6.53	11.75	5
1,819	1,481	-18.58	12.12	8.64	5.17	7.04	6
190	154	-18.95	13.78	10.23	9.01	16.06	7
430	350	-19.72	32.51	35.50	10.49	25.15	8
3,459	2,721	-21.34	0.69	1.64	0.65	3.00	9
299	211	-21.56	17.15	10.58	11.37	15.34	10
1,181	912	-22.78	23.43	20.48	13.93	18.54	11
258	198	-23.25	2.97	5.63	3.08	3.99	12
1,503	1,146	-23.76	13.73	18.52	8.07	13.72	13
136	102	-25.00	6.00	10.83	7.65	11.51	14
5,009	4,185	-25.39	3.67	4.40	1.80	3.07	15
471	350	-25.69	13.31	11.93	6.85	10.15	16
641	471	-26.52	13.18	16.12	9.57	15.12	17
390	275	-29.23	8.78	11.04	10.32	11.23	18
371	261	-29.65	11.11	12.38	15.36	15.25	19
327	229	-29.97	8.70	9.56	7.16	12.98	20
624	435	-30.29	17.88	15.88	12.33	21.64	21
158	104	-34.18	14.87	7.55	12.56	15.82	22
425	275	-35.29	13.49	13.23	6.07	11.53	23
1,197	767	-35.92	15.11	18.93	8.38	14.33	24
267	165	-38.20	21.07	19.63	13.40	20.51	25
1,070	637	-38.50	22.07	16.39	10.28	16.53	26
227	139	-38.77	10.81	6.92	8.11	11.57	27
255	170	-40.35	30.39	29.35	16.93	29.76	28
555	313	-43.60	22.10	21.48	14.71	26.33	29
227	116	-48.90	17.14	32.97	12.93	30.03	30
316	140	-55.70	22.27	32.90	10.50	21.90	31
10,264	3,102	-69.78	26.34	41.31	18.90	31.82	32
32,065	30,019	-	-	-	-	-	33
1,478	569	-	-	-	-	-	34
112	46	-	-	-	-	-	35
219	445	-	-	-	-	-	36
191	153	-	-	-	-	-	37
122	90	-	-	-	-	-	38
7,753	8,832	-	-	-	-	-	39
216	15	-	-	-	-	-	40
181	111	-	-	-	-	-	41
449	298	-	-	-	-	-	42
241	38	-	-	-	-	-	43
430	207	-	-	-	-	-	44
205	179	-	-	-	-	-	45
2,875	5,612	-	-	-	-	-	46
190	48	-	-	-	-	-	47
176	143	-	-	-	-	-	48
9,416	3,174	-	-	-	-	-	49
7,719	10,068	-	-	-	-	-	50
361,810	367,180	-	-	-	-	-	51
1,559	1,597	-	-	-	-	-	52
363,379	368,877	1.51	18.06	13.57	9.95	14.50	53

TABLE 29. Percentages of total wage-earners employed less than 12 weeks during the census year ended June 1, for selected industries in the Prairie Provinces, 1936

Industry ¹	P.C. of Total Wage-Earners Employed		
	Less than 12 Weeks	No Weeks	1-11 Weeks
Unspecified.....	45-80	25-22	20-58
Building and structures.....	41-55	21-30	20-25
Construction, n.e.s.....	37-00	22-37	14-43
Monumental stone and marble (Mfg.).....	33-33	16-37	16-96
Bricks and tile (Mfg.).....	30-62	19-77	10-85
Boot and shoe repairing.....	28-11	16-01	12-10
Applied science.....	25-70	15-80	9-81
Other and unspecified mining.....	25-15	14-72	10-43
Blacksmithing.....	23-39	10-87	12-52
Forestry and logging.....	22-90	12-30	10-60
Art and music (including commercial art).....	22-60	10-88	11-46
Furniture (including upholstering) (Mfg.).....	21-82	12-95	8-57
Sheet metal products (Mfg.).....	21-33	12-00	9-33
Coal and wood (Retail Trade).....	21-30	13-84	7-46
Quarries, gravel pits; salt wells.....	21-22	7-53	13-64
Cartage, trucking, and haulage service.....	20-77	11-24	9-83
Iron foundries.....	20-64	13-85	6-76
Miscellaneous products, n.e.s. (Mfg.).....	20-43	8-25	12-17
Iron products, n.e.s.....	20-29	13-22	7-07
Barber and hairdressing shops.....	19-88	9-39	10-49
Tanning (Mfg.).....	19-80	11-83	7-92
Business service, n.e.s.....	19-75	10-36	9-39
Harness and saddlery (Mfg.).....	19-70	15-15	4-35
Custom and repair, n.e.s.....	19-19	9-14	10-05
Fruits and vegetables (Retail Trade).....	18-52	5-56	12-96
Boilers, engines, and machinery (Mfg.).....	18-23	10-40	7-83
Laundries; laundering.....	18-22	12-84	5-28
Lumber (Wholesale Trade).....	18-13	13-33	4-80
Brass and copper products (Mfg.).....	17-60	10-40	7-20
Photographers' shops.....	17-45	10-64	6-81
Water transportation.....	17-15	8-24	8-91
Automobile manufacturing, dealing, repairing, garages.....	16-83	8-63	8-20
Billiard halls and sporting clubs.....	16-77	6-30	10-47
Electrical apparatus manufacturing, retail dealing, and repair.....	16-63	8-69	7-94
Boxes, baskets, and barrels (Mfg.).....	16-57	9-04	7-53
Biscuits and confectionery (Mfg.).....	15-98	10-45	5-50
Soaps and toilet preparations (Mfg.).....	15-58	7-79	7-79
Potteries, earthenware, and china (Mfg.).....	15-50	4-65	10-85
Agriculture.....	15-12	2-29	12-83
Boots and shoes (Retail Trade).....	14-93	7-89	7-04
Municipal government, n.e.s.....	14-83	9-03	5-80
Private domestic service.....	14-77	1-62	13-15
Candy and confectionery (Retail Trade).....	14-61	5-99	8-02
Bakeries.....	14-48	8-54	5-94
Saw and planing mills.....	14-39	5-10	9-29
Taxis, cabs, livery, and bus service.....	14-32	7-54	6-78
Wood products, n.e.s. (Mfg.).....	14-29	6-67	7-62
Hotels, restaurants, and taverns.....	14-25	7-64	6-61
Aerated and mineral waters (Mfg.).....	14-21	6-32	7-89
Meat, poultry, and fish (Retail Trade).....	14-13	7-50	6-54
Lime, plaster, cement, artificial stone (Mfg.).....	14-03	5-54	8-49
Clothing and dry goods (Retail and Wholesale Trade).....	13-80	7-11	6-69
Gold mining and milling.....	13-78	5-88	7-90
Law.....	13-50	7-56	6-03
Non-metallic mineral products, n.e.s. (Mfg.).....	13-46	0-96	12-50
Personal service, n.e.s.....	13-25	5-17	8-08
Flowers and seeds—Florists (Retail Trade).....	13-14	5-71	7-43
Groceries (Retail and Wholesale Trade).....	13-09	6-27	6-82
Musical instruments (Retail Trade).....	13-04	9-36	3-08
Jewelry (Retail Trade) and watch repairing.....	12-78	7-37	5-41
Paper products—boxes, bags, stationery (Mfg.).....	12-66	7-86	4-80
Agricultural implements and machinery (Mfg.).....	12-63	7-52	5-11
Accountancy and actuarial practice.....	12-53	8-64	3-89
Leather goods (Wholesale Trade).....	12-50	7-89	4-61
Dyeing, cleaning, and pressing.....	12-46	3-46	9-00
Fishing.....	12-21	7-69	4-52
General and departmental stores.....	12-16	4-05	6-03
Hosiery and knitted goods (Mfg.).....	11-92	8-61	3-31
Coal mining.....	11-79	8-00	3-79
Theatres and theatre agencies.....	11-61	7-23	4-38
Glass and its products (Mfg.).....	11-53	5-58	5-95
Oil and gas wells, processing, retail dealing.....	11-28	4-40	6-88
Advertising agencies.....	11-22	5-44	5-78
Clothing manufacturing and custom tailoring.....	10-63	4-70	5-03
Vegetable food products, n.e.s. (Mfg.).....	10-52	2-63	7-89
Printing, publishing, and bookbinding.....	10-28	5-79	4-49
Liquors and beverages (not aerated waters) (Mfg.).....	10-22	5-01	5-21
Slaughtering and meat packing (Mfg.).....	10-20	5-03	5-17
Leather gloves (Mfg.).....	10-20	2-72	7-48
Transportation, n.e.s.....	10-18	3-20	6-98

n.e.s.—not elsewhere specified.

¹Industries with 100 or more wage-earners.

TABLE 20. Percentages of total wage-earners employed less than 12 weeks during the census year ended June 1, for selected industries in the Prairie Provinces, 1936—Con.

Industry ¹	P.C. of Total Wage-Earners Employed		
	Less than 12 Weeks	No Weeks	1-11 Weeks
Furniture and house furnishings (Retail Trade).....	10-00	5-08	4-92
Lodging and boarding houses.....	10-00	6-29	3-71
Chemical products, n.e.s. (Mfg.).....	9-75	4-24	5-51
Pulp and paper.....	9-74	6-74	3-00
Drugs (Retail and Wholesale Trade).....	9-42	4-09	5-33
Wholesale dealing, n.e.s.....	9-37	4-84	4-53
Steam railways.....	9-36	4-46	4-90
Hardware (Retail and Wholesale Trade).....	9-31	5-06	4-31
Retail dealing, n.e.s.....	9-09	4-85	4-24
Butter and cheese factories, retail dairies.....	9-05	3-62	5-43
Paints, pigments, and varnishes (Mfg.).....	8-99	3-70	5-29
Fur goods (Mfg. and Retail Trade).....	8-84	5-03	3-81
Books and stationery (Retail and Wholesale Trade).....	8-81	4-75	4-06
Mattresses (Mfg.).....	8-80	6-40	2-40
Flour and grain milling.....	8-75	5-75	3-03
Investment and loan.....	8-72	5-92	2-81
Electric light and power production and distribution.....	8-63	5-62	2-91
Health.....	8-49	2-32	6-17
Insurance and real estate.....	8-32	5-33	2-99
Air transportation.....	8-20	2-05	6-15
Textile products, n.e.s. (Mfg.).....	7-76	5-17	2-59
Grain brokers, dealers.....	7-68	5-25	2-43
Telephone systems.....	7-59	3-39	4-20
Scientific and professional equipment (Mfg.).....	6-83	4-35	2-48
Undertaking establishments.....	6-78	5-08	1-70
Tobacco (Retail and Wholesale Trade).....	6-65	4-16	2-49
Electric railways.....	6-57	4-90	1-67
Liquors and beverages (Retail Trade).....	6-54	4-50	1-84
Social welfare and charity organizations.....	6-12	2-67	3-45
Lithographing and engraving.....	5-17	1-72	3-45
Federal and Provincial government, n.e.s.....	5-07	2-21	2-86
Associations—industrial and trade.....	5-02	2-79	2-23
Education.....	4-86	2-68	2-18
Copper mining and milling.....	4-69	1-83	3-06
National defence.....	4-43	1-37	3-06
Storage.....	4-37	1-99	2-38
Banking.....	4-35	2-86	1-49
Literature, journalism, and library service.....	4-16	1-78	2-37
Police (Municipal).....	3-79	1-79	2-00
Sugar refining: syrups.....	3-41	1-14	2-27
Postal service.....	2-52	1-25	1-27
Religion.....	2-13	0-77	1-36
Police service (Federal and Provincial).....	2-10	1-51	0-59
Optical goods (Retail Trade).....	2-09	1-00	1-00
Fire department.....	1-35	0-74	0-61
Industries with 100 or more wage-earners.....	13-63	5-39	8-24
Industries with less than 100 wage-earners.....	16-84	9-51	7-33
All industries.....	13-65	5-41	8-24

TABLE 21. Distribution of occupations of male wage-earners with regard to the three criteria of unemployment, Canada, 1931

Variable z	(1) No. of Occupations Having z P.C. Unemploy- ment on June 1, 1931	(2) No. of Occupations Having z P.C. Losing Time Year Ended June 1, 1931	(3) No. of Occupations in which z Weeks were Lost on the Average by Those Losing Time	(4) Total Male Wage- Earners in Occupations with z P.C. Unemploy- ment on June 1, 1931
0.....	2	-	-	-
1.....	22	6	-	38,433
2.....	20	5	-	36,543
3.....	16	10	-	38,021
4.....	12	8	-	33,772
5.....	14	9	-	35,428
6.....	17	6	1	32,374
7.....	18	4	1	44,000
8.....	21	5	-	147,397
9.....	13	6	2	32,549
10.....	14	5	2	23,219
11.....	18	2	2	180,839
12.....	16	8	3	42,751
13.....	9	3	9	8,380
14.....	14	5	12	16,807
15.....	13	6	8	37,453
16.....	13	8	19	295,977
17.....	10	6	19	31,303
18.....	13	3	27	27,117
19.....	11	4	31	64,742
20.....	11	4	43	46,395
21.....	13	9	40	28,280
22.....	8	6	38	10,034
23.....	5	5	38	7,325
24.....	7	3	26	26,413
25.....	7	8	16	41,707
26.....	8	6	11	11,434
27.....	9	2	12	24,359
28.....	8	2	5	60,782
29.....	4	8	6	6,091
30.....	-	10	2	3,935
31.....	3	4	1	10,321
32.....	2	4	2	8,826
33.....	4	4	1	72,197
34.....	1	8	-	518
35.....	-	1	-	-
36.....	1	7	-	618
37.....	2	6	-	2,191
38.....	3	4	-	427,895
39.....	-	5	-	-
40.....	1	3	-	1,445
41.....	-	3	-	-
42.....	2	5	-	15,714
43.....	-	4	-	-
44.....	1	2	-	37,143
45.....	-	6	-	-
46.....	-	4	-	-
47.....	1	6	-	4,904
48.....	-	3	-	-
49.....	-	7	-	-
50.....	-	3	-	-
51.....	-	6	-	-
52.....	1	6	1	17,469
53.....	-	4	-	-
54.....	-	6	-	-
55.....	-	9	-	-
56.....	-	2	-	-
57.....	-	8	-	-
58.....	-	2	-	-
59.....	-	7	-	-
60 and over.....	64	-	-	-
Total.....	384	384	384	2,022,221

APPENDICES

APPENDIX 1

UNEMPLOYMENT DATA IN RELATION TO THE LAWS OF PROBABILITY—DURATION AND FREQUENCY OF UNEMPLOYMENT

(1) Let p = the probability that a person is employed on a sample week and q the probability that he is unemployed, with N the number of workers in a group. Then Np is the number of persons employed on that week and Nq the number unemployed. If q remains constant throughout the year, $52q$ is the average number of weeks unemployed by N in a year.

Since $52Nq$ is the total number of weeks lost in the year, the average number of weeks lost by those losing time is $\frac{52Nq}{B}$ where B is the number of persons who lose any time during the year and A the number who lose no time.

Now in the sample week the sizes of A and B are not apparent; but let us suppose them as known.

The probability of unemployment in the sample week of those who lose time during the year is

$$\frac{q}{\frac{B}{A+B}} = \frac{Nq}{B}$$

(2) In this case since p and q represent a sample day, q is supposed to be constant throughout the period under consideration. But while the size of q is constant, its personnel is not necessarily so. The latter vary, i.e., persons that are unemployed at one observation are employed at another. This is true unless we add to the above probabilities a probability that because it is B that is idle on the sample day it is B that will be idle on another day—or that the liability of i as an individual is greater than that of another individual because he happened to be idle on the sample day. There is no mathematical necessity for this; i 's liability to unemployment on another day is mathematically governed only by the size of q .

(3) Now we have another hypothesis, viz., that the interchange between the A 's and B 's does not occur at infinitesimal intervals, but rather at finite intervals of 1 week so that the maximum number of interchanges is 52 in one year.

If the individuals of A and B are freely interchangeable, then it is clear that having only 52 interchanges under observation might well govern the relative sizes of A and B at the end of a year. Since q is constant, the size of B at any observation must be constant but some individuals of B may be more liable than others to remain in B . The smallest possible number of observations for all the A 's is when one individual is just as liable to unemployment as another, i.e.,

the smallest possible number of weeks to procure a complete transfer of A 's to B 's is $\frac{N}{Nq} = \frac{1}{q}$ which would be the case if all of the groups took turns at being unemployed. Suppose $q = 0.5$ then all the A 's will be converted to B 's in 2 weeks. Every individual in N will suffer alike 26 weeks unemployment during the year.

Suppose $q = 0.0192$ (i.e., 1.92 p.e. unemployed), then it takes 52 weeks for the complete turnover. At the end of the year under observation there is still no necessity for A to be left.

After q falls below 0.0192 there is an increasing mathematical necessity for A to be left over at the end of the year, but this implies no necessity that an individual in A is permanently immune from becoming a B —he is merely relatively immune. Notice that throughout the different sizes of q thus far, one individual's chances are as good as another's. In the last-mentioned example ($q = 0.0192$) every individual loses just 1 week.

Now as q becomes continuously smaller (after the 0.0192 mark is passed), A at the end of the year becomes larger and larger. Taking the case of $q = 0.01$ (i.e., 1 p.e. unemployed),

$\frac{1}{q} = 100$ weeks. In 52 weeks, or the whole year, only 52 p.e. of the workers can possibly have

become exposed, so that $A = 48$, $B = 52$ at the end of the year and instead of every individual in N losing 0.52 weeks, 52 p.c. lose 1 week each and 48 p.c. lose no time. However, if the period of observation had been 100 weeks instead of 52 everybody in N would lose 1 week in the whole period—and everybody alike.

This is to be noticed: at the end of 52 weeks the A's left over would have lost no weeks, but the B's would share alike—there is no mathematical necessity for one B to lose more than another.

(4) Let us now take the other extreme where there is no interchange. In this case the individuals of B remain constant and, q being constant, the number of weeks necessary to effect a complete interchange is infinite. In this case $\frac{A}{B} = \frac{p}{q}$ and B in a year loses $52q$ weeks, while A loses none.

Reasonably, the truth lies somewhere between the extremes, the A being neither completely free on the one hand nor rigidly fixed on the other. In this case the number of weeks required to expose every individual to some unemployment, *i.e.*, to eliminate A, varies according to the degree of rigidity as well as according to $\frac{1}{q}$.

Two things have been ascertained from the census data (i) $\frac{B}{A+B} \left(\text{or } \frac{B}{N} \right)$ from group to group correlates with q as $\frac{A}{A+B}$ correlates with p and (ii) when for a single group the duration is examined, *i.e.*, the percentage of the total losing no time, 1 week, 2 weeks, etc., in 52 weeks, it is found that these percentages vary according to the size of q and also of $\frac{B}{N}$. If these are very small the largest percentage is that losing 1 week, decreasing therefrom. As the q or $\frac{B}{N}$ increases, the size of the modal percentage slides up. It would seem that when $\frac{B}{N} = 1$, the percentage losing x weeks would be at a maximum when $x = 52q$. This, of course, has to be established. The desideratum is to ascertain a rationale for these two observations. So far, we have ascertained what can *not* be the explanation.

The only reasonable explanation of a correlation between q and $\frac{B}{N}$ is that $\frac{A}{N}$ is a function of p and a reasonable one to test is that $\frac{A}{N} = p^x$ where x is the number of interchanges between A and B during the period under observation.

Now our observations are in week intervals over a period of 52 weeks. It does not follow that when $x = 1$ this is at 1 week-interval; the interchanges may have some other significance. In 1931 for all wage-earners in Canada $p = 0.8165$ and $\frac{A}{N} = 0.6002$. It is obvious that $(.8165)^2$ is not 0.6002 or anything near it. However p^x may still equal $\frac{A}{N}$ given a reasonable value for x .

$$\begin{aligned} x \log 0.8165 &= \log 0.6002 \\ -0.08804 x &= -0.22170 \\ x &= 2.5 \end{aligned}$$

This would mean 2.5 complete interchanges in the year.

Now if this rate of interchange (2.5 times per annum) is comparable to (i) what happens from group to group of occupation, etc., or (ii) what happens over time (*i.e.*, among the in-

dividuals in a single group) as given in the percentage losing no time, 1 week, 2 weeks, etc., then we have arrived at a point where we can formulate a law governing the interaction of the employed and unemployed, i.e., of pN and qN .

First of all let us see what happens from group to group.

(a) If $p^* = \frac{A}{N}$, then if we take different groups of our census the data, log of p should

correlate with the log of $\frac{A}{N}$ with at least as high a coefficient as when p is correlated with $\frac{A}{N}$.

To make this test we took the 118 occupations shown in Chapter IV (omitting 2 which were obviously out of the field) and found a coefficient of .973 between the two logs. When the two were correlated arithmetically the coefficient was .966.

This establishes the theorem for the group test. A scatter diagram of the results is shown in Statement A below.

A.—CORRELATION OF PERCENTAGE OF MALE WAGE-EARNERS LOSING TIME WITH PERCENTAGE OF YEAR LOST BY MALE WAGE-EARNERS, CANADA, YEAR ENDED JUNE 1, 1931

Log of P.C. Losing No Time ¹	P.C. Losing Time	Log of P.C. of Year Worked ² and P.C. of Year Lost by Male Wage-Earners														Total
		1-98	1-96	1-94	1-92	1-90	1-88	1-86	1-84	1-82	1-80	1-78	1-76	1-74	1-72	
		0-4-50	4-51- 8-80	8-81- 12-90	12-91- 16-82	16-83- 20-57	20-58- 24-14	24-15- 27-56	27-57- 30-82	30-83- 33-93	33-94- 36-90	36-91- 39-74	39-75- 42-46	42-47- 45-05	45-06- 47-52	
1-95	0-10-87	13	1													14
1-90	10-88-20-57	1	16													17
1-85	20-58-29-21		1	10	3											14
1-80	29-22-36-90			6	13	1										20
1-75	36-91-43-77			1	1	3		1								6
1-70	43-78-49-88				3	7	5									15
1-65	49-89-55-33					1	1									2
1-60	55-34-60-19						2	5								7
1-55	60-20-64-52							5	1	1						7
1-50	64-53-68-38							1			1					2
1-45	68-39-71-82															
1-40	71-83-74-88															
1-35	74-89-77-61									2		2		1		4
1-30	77-62-80-09											2				2
1-25	80-06-82-22														1	1
1-20	82-23-84-15															
1-15	84-16-85-87														1	1
Total		14	18	17	20	12	8	12	1	3	2	6	-	1	2	116

¹ For determination of ends of intervals of percentage losing time.

² For determination of ends of intervals of percentage of year lost.

$$c_x = 0.61$$

$$c_y = 1.20$$

$$\sigma_x = 3.03$$

$$\sigma_y = 3.66$$

$$xy \text{ corrected} = 10.79$$

$$r_{xy} = \frac{10.79}{3.03 \times 3.66} = .97$$

$mx = 4.61$ in 0.02 intervals of log of percentage of year worked.

$my = 5.20$ in 0.05 intervals of log of percentage losing no time.

In 0.01 intervals, $mx = 9.22$; $\sigma x = 6.06$
 $my = 26.00$; $\sigma y = 18.30$

$$y - my = r \frac{\sigma y}{\sigma x} (x - mx)$$

$$y = 2.93x - 1.01$$

We see then that $\frac{A}{N} = p^i$ plus a very small error, where i is no longer a variable but a constant. Is there any way of giving a meaning to this constant?

If we assume that what thus happens from group to group is what happens over time (proportions losing 1 week, 2 weeks, etc.) we should be able to determine these proportions from the expansion of $(p + q)$. In the correlation with the 116 occupations the value of i was 2.9 or very near the 2.5 already mentioned in the all-Canada group. We should take 2.9 as more correct than 2.5. The proportions losing different periods of time, then, should be determined from the expansion of $(p + q)^{2.9}$.

The index 2.9 being fractional, it would serve no purpose to expand it but at any rate $p^{2.9}$ and $q^{2.9}$ (when we know p and q) should give results comparable to (a) the proportion losing no time, (b) the proportion losing the whole year. We have already seen that it gives the proportion losing no time. The value of $q^{2.9}$ comes within reasonable distance of giving the proportion losing 52 weeks, so near indeed that if we merely re-state the idea of "working no time" to "not working one day in the year" we may say that we have a sufficiently accurate calculation. Presumably a large number of persons who worked a day here and a day there reported themselves as losing 52 weeks so that this number as given in the census may safely be regarded as above the true figure. If this argument be allowed, $q^{2.9}$ gives the correct proportion for those working no time. If p^i and q^i are given thus correctly, the totality of those losing time must be correct and the expansion of $(p + q)^{2.9}$ meets this test successfully.

To use it for practical purposes it is necessary to fit a truncated normal to the weeks duration. This has already been done in Chapters I and V. The fit is such that it would seem that the law is satisfactorily established. If so, then a feature of tremendous importance is disclosed, viz., a reasonable inference that we are able to determine what happens over time from what happens from group to group at the same time; in other words, *in employment data we can determine a time series from a space series*. This establishes a permanent value in census data. They are true not only of the moment at which they occur but also over a period of time that is no longer than would admit of the same variation of q as was found in different homogeneous groups shown at the census date. If i is found constant for 116 groups, reasonably it should be constant for a period of time in which the variability of q was, say, three times the standard deviation of q , viz., 11.0 p.e. of the year. If the changes occur not at infinitesimal periods but at finite and fairly long periods such as, say, seasons, its truth should cover a good many years.

We now come back to the significance of i being a constant. It is impossible to demonstrate the precise meaning of i being just 2.9 but we can offer explanations which are reasonable.

Of course it must be remembered that i is a constant only within the limits of the correlation

.97. High as this is, there is still a certain error involved, viz., $(\sqrt{1 - 0.97^2}) \sigma_p$. This means

that if $\frac{A}{N}$ is calculated from the regression equation for each of the 116 occupation groups it will

differ from the actual $\frac{A}{N}$ by a certain amount. If we take $\frac{A}{N} = p^i$ for every actual group, i will

differ from 2.9 by certain amounts depending upon this error. The error itself is not necessarily an error in theory but an individuality in the occupation groups. They have different degrees of rigidity, i.e., the transfer from A's to B's depends not only upon the size of q but slightly upon the individuality of the group. We define the individuality (independence of q) of the occupation groups as "independence of A" or the "rigidity" of the proportion losing no time. Because of the high correlation this rigidity is not great and we can speak quite safely of 2.9 as a constant representative number of interchanges, or as a constant value of i .

Another matter that may not be quite so sound is that we are taking this 2.9 as being confined to the period of 52 weeks. This is not theoretically sound, but from the closeness to which the proportion "working no time" can be calculated it would seem that there is no serious error in so confining it within the period of 52 weeks.

If we take the expansion of $(p + q)^{2.9}$ as representative of the manner in which the interchanges take place we notice that two of the combinations in this expansion are $p^{2.9}$ as those losing no time and $q^{2.9}$ as those working no time. If we had an integral index like 3 instead of 2.9 we would have two additional combinations; in the actual index we have slightly less than 2 more but more than 1. Within the year, then, there are approximately 2 breaks of some kind at which persons who had previously lost no time are thrown out of work. This could happen in

two ways, viz., through a sudden increase in unemployment and through a change in staff. The sudden increase in unemployment is undoubtedly the winter season. The year concerned is for June 1, 1930 up to June 1, 1931, so that all seasons were covered in a certain order. Probably the index of employment as reported by firms to the Dominion Bureau of Statistics will illustrate this better than any other set of figures. The index is based on the year 1920.

June, 1930.....	116.5	October.....	116.2	February.....	100.7
July.....	118.9	November.....	112.9	March.....	100.2
August.....	118.8	December.....	108.5	April.....	99.7
September.....	116.6	January, 1931.	101.7	May.....	102.2

It will be noticed that up to about September there was an up trend which would probably prevent any one at work in June from being thrown out of work. The heavy slump from then on is both seasonal and secular.

If we take the first difference from August on we have the following:—

		1st difference (downward)
September	1	2.2
October		0.4
November	2	3.3
December		4.4
January		6.8
February	3	1.0
March		0.5
April		0.5
May		-2.5

There were thus three sharply defined phases under which the A's were becoming B's, viz., (1) up till October, (2) November to January and (3) February to May. We take it that the person who ordinarily loses no time is less affected by a steady downward trend than the person who ordinarily loses some time. The point, however, is that there were almost three p 's during the year that would affect the interchange so that $p^{2.9}$ is really $p_1 p_2 p_3$, the first, (p_1) being the June to October, the second (p_2) November to January and the third (p_3) from February on. The influence of p_3 was somewhat reduced by the falling trend. This would be especially true if there was a tendency to group distinction in unemployment. In a falling trend we have a gradually diminishing p but this diminution is merely causing the B's to lose more and more time instead of transferring A's to B's. We have already established that there is such group distinction. Furthermore, the different degrees of rigidity of the industries, as shown in Statement CXXIII, shows that the A's of some industries are less sensitive to a change in p than others. If all industries were sensitive to infinitesimal changes in p then our i would be infinite instead of 2.9.

If the above explanation is true it should be reflected in the data on duration of unemployment by week intervals. As a matter of fact it is. When a truncated normal is fitted to the duration in a group of industries where seasonality is particularly heavy, it is found to understate the middle duration and overstate the lower and higher. This is exactly what was to be expected.

Within the limits of the error allowed by a correlation of .97 the i does vary from 2.9, being below this in the more rigid and above in the less rigid. In the 116 occupation groups it goes as high as 4.3 and as low as 1.8 (see Statement CXXII). This is quite intelligible on the basis of the explanation given.

An alternative explanation can be arrived at by doing what logically should be done in any case, i.e., to consider the manner in which the 2.9 was derived from the occupation groups and then examine the sense in which it should be derived as applying to the monthly data for 1931. It will be remembered that when the 116 occupation groups were taken the correlation between

p and $\frac{A}{N}$ was nearly perfect, so that the 2.9 meant that, taken logarithmically, the standard deviation of $\frac{A}{N}$ was 2.9 times the standard deviation of p , i.e., the variability of the one was 2.9 times that of the other. This is the same as saying $\frac{A}{N} = \frac{2.9}{p}$. Now let us apply the same reasoning to the monthly data. The monthly index of employment from the reports of firms is not the same as an index of the percentage employed of wage-earners, but it should be proportional. Thus if the year 1930-31 was 109.1 (geometrie) and that of June was 116.5, considering the employment of the year as p , that of June 1930 should be somewhere near $\frac{116.5}{109.1}p$ or 1.068 p .

It is reasonable to lay down as a working hypothesis that a change in $\frac{A}{N}$ is caused by a change in p . This means in the concrete that if the percentage employed remained constant through the year, $\frac{A}{N} = p$, i.e., the persons losing no time throughout the year would tend to be the same persons as were working in the first week or first month of the year. "Tend to be" because if this were strictly true of all persons, then those who were unemployed in that first month would be unemployed throughout and this is not wholly true in the case of any group. What we mean is merely that of the two classes A and B, at the beginning A would have a greater tendency to remain an A and B to remain a B throughout. Their comparative chances would probably be $\frac{p}{q}$ for A to remain an A and $\frac{q}{p}$ for B to be re-employed. As a matter of fact this is demonstrated in Chapter IV where it is shown that the time lost by those losing time shows a correlation with $\frac{B}{N}$.

Now when the p is changing throughout the year, the number of wage-earners remaining constant, it follows that new persons are thrown out of employment, i.e., new A's are becoming B's. Once they are B's they do not regain their A status by re-employment. This refers to the case where p decreases. Something similar happens when p increases and the number of wage-earners also increases, because in this case new wage-earners are taken on and they are apt to have been unemployed (i.e., B's) when taken on. Consequently the number of A's in whatever way it is considered is apt to change with a change in p . From group to group the one is extremely sensitive to the other as is shown by the high correlation of .97.

By the index i we can watch whether there is a growing tendency for the industries to become more rigid or individualistic. The smaller the range of p compared with the standard deviation of p the more rigid the industry. The only way in which the range could be narrower within the same time limits in one industry than another—i.e., the manner in which p could vary the same in two industries but the p 's differed within the same period of time—is by a control of p in such a way that it is kept down to trend. The standard deviation would be increased by violent departures from trend. The only conceivable way in which they could be accomplished is by throwing out of the industry any person for whom there was no immediate use.

It would seem that this explanation of the 2.9 amounts to the same thing in the long run as that of connecting it with the seasonal variations. We can see this from a concrete example. Let us suppose that employment is dropping and that 2,000 men are employed at the beginning of the year in a firm which, before the end of the year, has dropped 1,200 men. Whether from the point of view of the firm, i.e., the percentage of the possible working time which was actually worked, or from the point of view of the original 2,000 men, i.e., the percentage of their possible working time actually worked, the possible number of working months was 24,000. Now let us suppose two such firms (1) where the 1,200 men were dropped 100 a month. The actual time worked in their case was 17,400 months so that the (average) p was 0.725. The standard deviation of the p was about 0.173. The differential drop in the percentage was 1.00 to 0.45 = 0.55 and this is about three times 0.173.

The second firm instead of dropping off 100 a month, dropped all the 1,200 at once and yet the 17,400 months were worked as before, i.e., the p remains the same. In this case all would get work for the first six and a half months and only 800 the last five and a half months. The p (average) is still 0.725 but the differential is now 800, the standard deviation of p is 0.292 and the drop is 0.60 or 2.1 times 0.292. The i with 12 drops is greater than that with 1 drop by almost 1 or it is almost one and one half times as large.

Let us consider the difference in behaviour between the two firms. The first dropped gradually, i.e., they were hanging on to *all* their men as long as possible; the second hung on to *some* of their men the whole year. Suppose the men in these two firms were reporting to the census at the end of year. The chances are that far more of the men of the first firm would consider themselves as still belonging to that firm than of the second. Consequently the second would appear to have a higher p than the first whereas in reality it was the same. We can easily imagine that some at least of the men of the second firm were re-employed in another firm. In this case the latter firm would appear at the end of the year as having a lower p than it really had. Suppose on the other hand the firm dropping the 1,200 men at the middle of the year had dropped them in the first month, and remained steady for the rest of the year. If those dropped had been re-employed by other firms before the end of the year they would give their last firms as their employers, consequently the original firm would appear to have had little or no employment and nearly all their men would be A's, i.e., losing no time. The few who failed to procure re-employment would be idle the whole year, so that a small number of B's losing the whole year would be shown. Consequently the more B's, the more unemployment.

APPENDIX 2

CONSTANTS, COEFFICIENTS, ETC., OBTAINED FROM CORRELATING THREE MEASURES OF UNEMPLOYMENT WITH SEVEN SETS OF DATA

Three measures of unemployment and seven sets of data, all in index form, were correlated using the following regression equations:—

$$X_1 = A + BX_2 + CX_3 + DX_4 + EX_5 + GX_7 + HX_8 + KX_9,$$

$$X_{10} = A + BX_2 + CX_3 + DX_4 + EX_5 + GX_7 + HX_8 + KX_9,$$

$$X_8 = A + BX_2 + CX_3 + DX_4 + EX_5 + GX_7 + HX_8 + KX_9,$$

where the three measures of unemployment are:—

X_1 = unemployment June 1;

X_{10} = yearly unemployment;

X_8 = incompactness, i.e., percentage of wage-earners who lost any time,

and the seven sets of data are:—

X_2 = age liability to unemployment;

X_3 = seasonality;

X_4 = locality;

X_5 = female content;

X_7 = juvenile content;

X_9 = average earnings;

X_6 = degree of eradication of independent worker.

In addition to this, each of the three measures of unemployment was correlated with the seven sets of data individually and, also, the three measures of unemployment were themselves correlated in pairs. The results are shown below.

A.—CONSTANTS, COEFFICIENTS AND RELATED DATA OBTAINED BY MULTIPLE CORRELATION OF THREE MEASURES OF UNEMPLOYMENT AND SEVEN SETS OF DATA

Item	X_1 Unemployment June 1	X_{10} Yearly Unemployment	X_8 Incompact- ness
A.....	-220	-155	-77
B.....	1.6282	1.6835	1.2816
C.....	.9045	.1245	— .0517
D.....	1.2079	1.2380	.7040
E.....	— .1243	— .1320	— .1321
G.....	— .1173	— .1018	— .0532
H.....	— 1.0302	— .9611	— .8062
K.....	.3968	.4065	.5292
R (multiple correlation coefficient).....	.69	.68	.64
S (standard error).....	37.7	33.6	32.8
σ (standard deviation).....	52.1	45.7	42.7

B.—SIMPLE CORRELATION COEFFICIENTS BETWEEN INDIVIDUAL ITEMS OF DATA AND MEASURES OF UNEMPLOYMENT, WITH STANDARD DEVIATIONS OF THE DATA

Item of Data	Correlation with Measures of Unemployment			Standard Deviations of Data
	X ₁	X ₁₀	X ₄	
X ₁.....	.28	.35	.53	9.7
X ₂.....	.34	negligible	negligible	23.0
X ₃	negligible	negligible	negligible	9.2
X ₄	-.25	-.28	-.32	110.0
X ₅	negligible	negligible	negligible	69.1
X ₆	-.30	-.36	-.27	29.2
X ₇	negligible	negligible	negligible	37.0

C.—SIMPLE CORRELATION COEFFICIENTS BETWEEN MEASURES OF UNEMPLOYMENT

Measures of Unemployment	Simple Correlation Coefficient
X ₁ and X ₄.....	.84
X ₁ and X ₁₀.....	.62
X ₄ and X ₁₀.....	.93

APPENDIX 3

CALCULATION OF THE INDEX OF FLUCTUATION OF INDUSTRY (MAINLY SEASONALITY) AND DETERMINATION OF ITS EFFECT ON THE CORRELATION BETWEEN UNEMPLOYMENT AND THE DEGREE OF ORGANIZATION OF INDUSTRY

A.—INDEX OF EMPLOYMENT FOR THIRTY SELECTED INDUSTRIES AND FOR ALL INDUSTRIES AS REPORTED TO THE DOMINION BUREAU OF STATISTICS BY EMPLOYERS IN INDUSTRIES OTHER THAN AGRICULTURE, 1929, 1930 AND 1931, SHOWING THE MEAN OF EACH YEAR, THE COEFFICIENT AND THE INDEX OF FLUCTUATION OF INDUSTRY FOR EACH INDUSTRY AND FOR ALL INDUSTRIES¹

No.	Area	Industry	Crude Index of Employment in											
			1929						1930					
			Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	Maritime	Logging	182	185	171	78	69	83	85	68	53	77	179	229
2	Provinces	Mining	108	110	107	107	108	107	113	113	112	112	112	111
3		Trade	121	110	109	114	113	114	119	110	118	125	123	133
4	Quebec....	Lumber Products (Mfg.)	79	84	88	87	102	116	127	133	125	123	113	99
5		Pulp and Paper (Mfg.)	103	108	105	109	108	110	112	114	112	112	111	110
6		Textile Products (Mfg.)	106	110	111	112	109	107	104	103	103	105	105	105
7		Iron and Steel (Mfg.)	110	117	122	123	127	124	122	123	119	119	118	108
8		Logging	182	202	168	57	73	113	91	79	84	116	207	229
9		Mining	124	127	131	132	139	144	152	151	153	158	159	159
10		Communications	114	110	119	118	123	125	124	124	124	122	119	118
11		Transportation	94	92	85	83	96	116	119	117	114	111	113	109
12		Construction	67	64	63	57	77	105	131	140	147	135	134	105
13		Trade	125	129	119	128	130	133	134	133	133	134	136	138
14	Ontario....	Lumber Products (Mfg.)	89	96	97	98	115	126	128	126	123	120	109	95
15		Pulp and Paper (Mfg.)	110	113	111	111	112	114	115	117	115	116	117	116
16		Textile Products (Mfg.)	109	108	109	110	113	111	108	106	107	111	108	100
17		Iron and Steel (Mfg.)	117	134	141	144	149	142	133	130	125	123	118	112
18		Logging	204	219	206	73	57	62	50	44	68	137	209	268
19		Mining	126	125	119	120	136	138	141	148	149	149	152	150
20		Communications	112	110	112	115	118	121	125	128	132	131	129	131
21		Transportation	102	102	100	102	111	115	119	120	120	116	113	109
22		Construction	106	93	96	104	138	158	178	193	181	175	163	140
23		Trade	134	119	118	122	124	128	130	126	129	130	133	137
24	Prairie	Mining	133	134	129	108	103	103	105	112	119	131	132	132
25	Provinces	Transportation	112	106	104	106	112	122	123	123	127	128	126	115
26		Construction	96	87	88	101	134	188	199	232	220	174	157	108
27		Trade	127	118	117	122	124	123	124	125	127	124	128	134
28	British	Logging	104	87	108	108	110	118	112	116	119	120	109	100
29	Columbia	Construction	89	79	73	89	115	146	161	167	150	134	119	104
30		Trade	122	121	121	120	118	119	121	121	122	123	123	128
31	All Canada	All industries ¹	109	111	111	110	110	122	125	128	127	126	125	119

Formula to obtain coefficient of fluctuation:

$$\sqrt{\frac{(\sigma_{x_{29}})^2}{(\bar{x}_{29})} + \frac{(\sigma_{x_{30}})^2}{(\bar{x}_{30})} + \frac{(\sigma_{x_{31}})^2}{(\bar{x}_{31})}}$$

3

To obtain index, divide coefficient of individual industry by base, i.e., similar coefficient for all industries except agriculture in all Canada.

¹Except agriculture.

APPENDIX 3

CALCULATION OF THE INDEX OF FLUCTUATION OF INDUSTRY (MAINLY SEASONALITY) AND DETERMINATION OF ITS EFFECT ON THE CORRELATION BETWEEN UNEMPLOYMENT AND THE DEGREE OF ORGANIZATION OF INDUSTRY

A.—INDEX OF EMPLOYMENT FOR THIRTY SELECTED INDUSTRIES AND FOR ALL INDUSTRIES¹ AS REPORTED TO THE DOMINION BUREAU OF STATISTICS BY EMPLOYERS IN INDUSTRIES OTHER THAN AGRICULTURE, 1929, 1930 AND 1931, SHOWING THE MEAN OF EACH YEAR, THE COEFFICIENT AND THE INDEX OF FLUCTUATION OF INDUSTRY FOR EACH INDUSTRY AND FOR ALL INDUSTRIES¹

Crude Index of Employment in																		Mean Index of Employment in			Coefficient of Fluctuation of Industry	Index of Fluctuation of Industry X_{11}	No.
1930						1931												1929	1930	1931			
July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.						
125	43	41	37	18	143	104	122	113	31	50	58	12	15	22	28	181	208	121	97	84	-682	1,668	34
122	111	114	122	111	111	108	107	105	105	106	107	108	107	108	107	105	103	110	121	106	-014	34	34
123	121	130	123	124	130	129	119	117	119	117	124	124	117	115	115	113	118	118	121	116	-045	119	33
110	110	106	99	92	82	74	78	79	81	90	96	98	91	88	88	78	72	106	94	84	-134	327	4
106	106	105	102	98	95	90	88	89	87	89	92	90	88	84	87	87	84	109	103	88	-028	68	5
102	98	100	101	104	100	98	103	106	106	104	103	99	92	96	99	96	96	107	102	100	-035	85	6
115	109	103	103	101	97	95	100	103	104	103	97	94	99	88	99	98	99	120	110	91	-088	215	7
106	87	85	114	149	149	138	156	143	89	73	51	35	39	71	93	106	135	140	83	-454	1,107	8	
140	141	137	133	134	129	117	104	105	109	110	96	105	112	111	119	109	144	140	108	-062	151	9	
115	116	113	112	113	110	103	102	101	102	102	100	99	98	98	97	98	121	114	100	-026	63	10	
109	108	110	108	105	103	85	85	80	91	98	99	99	99	97	97	99	104	97	94	-104	254	11	
137	135	134	128	121	97	89	85	86	80	112	118	120	180	132	100	80	102	104	108	-279	680	12	
39	134	134	135	130	145	147	133	132	135	130	133	133	130	130	132	133	137	131	134	-040	98	13	
109	109	101	100	93	81	72	78	79	79	85	90	89	87	84	78	74	69	110	97	82	-102	249	14
109	111	108	109	107	103	90	98	95	90	105	97	98	99	97	100	95	97	114	110	98	-023	56	15
98	96	95	100	102	100	92	95	102	105	104	101	97	95	93	95	95	94	108	102	98	-038	93	16
109	109	109	109	109	109	109	109	109	109	109	109	109	109	109	109	109	109	109	109	109	-000	109	17
57	46	34	55	00	107	109	108	77	33	36	37	28	21	22	26	43	53	133	110	49	-662	1,615	18
142	143	144	142	141	139	130	132	134	136	136	138	140	139	138	132	130	129	133	143	-053	129	19	
117	116	115	113	111	107	103	102	101	101	102	101	101	100	98	97	96	122	119	100	-051	124	20	
111	113	112	111	105	103	93	90	90	91	96	102	100	99	98	95	94	111	106	95	-054	130	21	
169	175	172	171	157	137	115	123	119	115	120	130	137	137	132	126	129	140	144	143	-122	444	22	
132	120	128	120	130	140	139	126	125	127	131	131	131	126	126	124	124	124	128	131	-036	88	23	
92	100	102	120	143	137	132	124	115	103	95	94	87	86	91	111	114	117	120	112	-006	137	24	
110	110	116	119	115	108	106	106	96	97	97	100	92	98	98	101	104	100	117	109	-054	100	25	
144	173	187	183	168	143	90	79	76	75	60	108	141	253	253	261	256	129	149	120	-408	955	26	
123	121	126	122	124	124	122	116	113	112	114	112	111	110	107	110	108	124	124	121	-031	76	27	
39	63	55	57	56	59	47	46	50	51	59	59	50	40	39	41	31	34	109	76	45	-176	429	28
161	175	162	156	132	125	129	127	119	116	131	144	142	137	130	150	205	153	118	120	-227	554	29	
120	118	121	126	125	122	116	115	114	116	112	114	114	114	113	117	116	114	121	130	-020	49	30	
119	119	117	116	113	108	102	101	100	100	102	104	104	105	107	106	103	99	119	114	-041=100	Mean=356	31	

B.—DATA RELEVANT TO THE COMPUTATION OF THE INDICES OF YEARLY UNEMPLOYMENT (X_0), FEMALE CONTENT (X_1) AND AVERAGE EARNINGS PER WEEK WORKED (X_2), AND SHOWING ALSO THE INDEX OF AGE LIABILITY TO UNEMPLOYMENT (X_3), FOR THIRTY SELECTED INDUSTRIES, CANADA, YEAR ENDED JUNE 1, 1931

Area	Industry	Male Wage-Earners	Weeks Lost by Male Wage-Earners during Year Ended June 1, 1931			Female Wage-Earners			Index ³ of Age Liability to Unemployment (X_3)	Total Weeks Worked by Male Wage-Earners	Earnings of Male Wage-Earners		
			Total	Average	Index ¹ (X_{10})	No.	P.C. of Total in Industry	Index ² (X_1)			Total (\$00)	Average per Week Worked	Index ⁴ (X_2)
											\$	\$	
Maritime Provinces....	Logging.....	5,402	75,476	13.97	128	34	0.53	3	98	197,890	19,799	10.01	41
	Mining.....	17,909	346,972	19.38	177	42	0.23	1	100	573,337	120,420	20.98	85
	Trade.....	13,519	54,969	4.07	37	6,139	31.23	136	100	632,134	137,902	21.82	90
	Lumber Products (Mfg.).....	15,219	167,414	11.00	100	419	2.68	12	98	996,775	104,046	17.15	71
	Pulp and Paper (Mfg.).....	17,006	162,365	9.55	87	1,646	8.32	38	102	709,368	133,038	25.80	106
Quebec.....	Textile Products (Mfg.).....	23,284	211,270	9.07	83	24,770	51.55	234	100	957,827	203,291	21.00	85
	Iron and Steel (Mfg.).....	30,735	306,911	9.95	91	1,475	4.58	20	102	1,262,323	330,378	26.17	108
	Logging.....	15,911	221,756	13.94	127	20	0.13	1	97	585,969	70,665	12.06	50
	Mining.....	7,922	102,589	12.95	118	39	0.49	2	102	302,974	64,840	21.40	88
	Communications.....	4,509	19,335	4.20	38	4,079	48.97	204	95	216,044	69,531	32.18	132
	Transportation.....	59,777	444,717	7.44	68	2,195	3.54	15	102	2,534,770	945,174	25.45	105
	Construction.....	73,001	1,200,059	16.44	130	892	0.53	2	100	2,521,885	524,510	20.80	86
	Trade.....	53,761	295,285	6.49	30	17,012	24.04	104	99	2,406,406	546,963	22.71	93
	Lumber Products (Mfg.).....	25,386	294,417	11.60	109	1,103	4.18	18	98	1,005,308	195,998	19.50	80
	Pulp and Paper (Mfg.).....	12,349	117,379	9.51	87	2,451	18.56	72	101	517,327	148,479	28.70	118
	Textile Products (Mfg.).....	21,087	233,601	11.08	101	21,011	49.91	217	100	842,311	202,544	24.05	99
	Iron and Steel (Mfg.).....	78,858	1,148,125	14.94	136	4,218	5.20	23	101	2,796,975	741,114	26.50	109
	Logging.....	9,715	174,353	17.50	164	48	0.47	3	99	320,998	45,532	14.18	58
	Mining.....	18,021	169,214	9.39	89	120	0.66	3	105	754,325	202,630	26.86	111
	Communications.....	7,085	3,219	4.53	41	6,812	49.02	213	99	330,407	102,573	31.94	128
Ontario.....	Transportation.....	80,980	626,053	7.73	71	2,514	2.78	12	105	3,424,983	916,779	26.77	110
	Construction.....	74,198	1,433,904	19.19	175	560	0.68	4	99	2,362,033	531,924	22.52	93
	Trade.....	78,225	454,378	5.81	53	32,018	29.04	129	99	3,497,511	900,023	25.73	106
	Lumber Products (Mfg.).....	13,430	252,893	18.53	172	70	0.52	2	100	433,487	119,479	27.56	113
	Pulp and Paper (Mfg.).....	53,082	449,055	8.46	77	1,251	2.30	10	110	2,271,921	614,250	27.04	111
Prairie Provinces.....	Construction.....	31,411	569,252	21.31	195	315	0.99	4	99	934,938	187,305	20.03	82
	Trade.....	40,542	247,883	6.11	59	14,340	25.12	113	100	1,800,054	488,387	27.13	112
	Lumber Products (Mfg.).....	14,700	346,221	23.55	215	129	0.85	4	99	394,255	79,044	20.05	83
	Logging.....	20,678	435,594	21.11	193	124	0.60	3	98	630,504	147,512	23.74	98
	Construction.....	18,563	122,832	6.62	60	6,741	26.64	110	100	799,659	199,745	24.98	103
British Columbia.....													
Mean.....					108			57	100				95

Base: All industries except agriculture.

¹ 10-95 weeks=100.

² 23-02 p.c. females=100.

³ For method of computation, see Chap. III, p. 133.

⁴ \$24.29=100.

Yearly unemployment (X_{10}) was correlated with female content (X_1), age liability to unemployment (X_2), average earnings per week worked (X_3) and seasonality (X_{12}) using the following regression equation:—

$$X_{10} = A + BX_1 + CX_2 + DX_3 + EX_{12},$$

where by calculation it was found that $B = -.4362$, $C = -3.7970$, $D = -.1095$, $E = .0183$.

The coefficient of correlation obtained was:—

$$R = \frac{BX_{10}X_1 + CX_{10}X_2 + DX_{10}X_3 + EX_{10}X_{12}}{(X_{10})^2}$$

$$= \frac{1,041 + 21 + 52 + 209}{2,610} = \frac{1,323}{2,610} = .5069$$

$$R = .712$$

From the above we see that the predicted weights of the individual factors in making up the multiple correlation expressed as percentages of the whole correlation are:—

	P.C.
Female content.....	78.7
Age liability to unemployment.....	1.6
Average earnings per week worked.....	3.9
Seasonality.....	15.8

In order to see if the inclusion of an index of seasonality has raised the correlation between the yearly unemployment and the first three of the above indices which, it will be recalled, were the main constituents expressing what has been defined as the organization of the industry, we drop X_{12} and find by calculation that $B = -.4657$, $C = 4.3753$, $D = -.3483$.

The new coefficient of correlation is:—

$$R = \frac{BX_{10}X_1 + CX_{10}X_2 + DX_{10}X_3}{(X_{10})^2}$$

$$= \frac{1,112 + 24 + 167}{2,610} = \frac{1,303}{2,610} = .4992$$

$$R = .706$$

The inclusion of an index of seasonality has, therefore, not significantly raised the correlation (the increase is only .006).

Of interest, however, is the change, if any, in the weights of the individual items. Expressed as percentages of the whole correlation, they are:—

	P.C.
Female content.....	85.3
Age liability to unemployment.....	1.8
Average earnings per week worked.....	12.9

We see that what weight seasonality has is drawn nearly equally from female content and average earnings per week worked. This is both significant and logical. It has been shown that seasonal industries have a very small female content and also a low rate of average earnings per week worked. Therefore, when seasonality is isolated, the correlation between female content and unemployment is lowered. In other words, the fact that absence of females in an industry and a low rate of earnings coincide with large unemployment is in part because of the influence of seasonality.

The deduction is, therefore, that the influence of seasonality is accounted for when the structure of the industry group (*i.e.*, the combined weight of female content, age liability to unemployment, average earnings per week worked, etc.) is related to unemployment.

APPENDIX 4

ON THE SAMPLE OF OCCUPATIONS AND INDUSTRIES

It may be seen in the scatter diagram (Chart 16) that a much stronger central tendency exists among occupations in the matter of duration of unemployment than in percentage losing time. The extent to which this central tendency exists in the one case and not in the other is shown in Table 19 which, if charted would show the frequency distribution of occupations by duration to be a typical very sharply-humped, bell-shaped curve, while in the percentage unemployed June 1, there is a greater number at the very small percentages than at larger ones, giving the distribution a rough J-shape.

But since the number of males in an occupation varies from 10 to 400,000, any tendency of the large occupations to have greater unemployment than the small ones would mean that our J-shaped distribution was merely accidental. Such is in fact the case. There is a natural tendency in any occupational classification to split up into the finest classes the most skilled and specialized types of work, and to have in large groups the more unspecialized ones. This has the effect of rendering almost meaningless such a table as the first three columns of Table 19. The logical procedure is to use, not occupations, but persons in the occupations. Thus we have Column 4 of Table 19 giving the number of males in occupations having 1, 2, 3, etc., p.c. unemployment on June 1, 1931. But it can be seen at once that this, while perhaps giving the distribution more faithfully than Column 1, since it allots importance to an occupation in proportion to the number of its wage-earners, is extremely unsatisfactory because of its rough nature. It really tells us nothing about unemployment in the occupations except that there is little central tendency among them taken as a whole.

How can we solve the problem of investigating the vast fund of information embodied in the Census of Occupations (and the same problem exists for industries)? First, we can describe individual cases. This has been done in considerable detail. But it is naturally desirable to use the occupation (or industry) data as a whole, as we have been more or less attempting to do in the larger part of this monograph. The problem of the enormous variation in size between the occupation classes, which variation renders it impossible to draw any conclusion from Statements CXVI and CXVII, was solved by selecting a group of occupations within certain rather narrow limits of size. The same approach was used in industries, in Chapter IV, for the same reason.

Further, since occupations and, most particularly, industries, tend to differ considerably in nature from one province to another, there was a very great advantage in taking the occupation or industry in the given province as the unit. In Chapters III and IV the result of this method of sampling is shown in the satisfactory representation it gives to provinces and major groupings. To determine its representativeness for industries with regard to age we have added up the numbers in the various age groups both of employed and of unemployed. The results are given in Columns 1 and 3 below. In Columns 2 and 4, under the heading "Expected" are the fraction of the numbers in Canada of wage-earners and unemployed males which the total of the sample bears to the total of the sampled quantity. It will be seen at once that the age distribution expected is close to that of the sample; of undue emphasis of particular ages there is obviously no danger.

A.—ACTUAL AND EXPECTED REPRESENTATION OF WAGE-EARNERS AND UNEMPLOYED IN THE 122 INDUSTRIES OF THE SAMPLE SELECTED IN CHAPTER III, BY AGE GROUP, CANADA, JUNE 1, 1931

Age Group	Number of Wage-Earners			
	Actual (1)	Expected (2)	Unemployed June 1	
			Actual (3)	Expected (4)
All ages.....	410,400	410,491	62,955	62,957
17.....	14,925	15,290	2,133	2,173
18-19.....	21,059	21,907	3,719	3,725
20-24.....	63,424	62,591	10,976	10,405
25-34.....	112,034	109,439	15,803	15,667
35-44.....	89,480	88,886	11,941	12,022
45-54.....	64,735	66,471	9,991	9,806
55-64.....	32,328	33,203	5,832	5,651
65-69.....	7,703	8,010	1,627	1,604
70.....	4,752	4,704	933	904

$$\chi^2 = 200.73 \quad \chi^2 = 87.98$$

But from the viewpoint of providing a measure of the randomness of the sample, how do the actual and expected age distribution compare? The value of χ^2 was taken for both the wage-earners and the unemployed independently (i.e., between Columns 1 and 2 and between 3 and 4) and was found to be 200.73 for the wage-earners and 87.98 for the unemployed. A table of P would of course show odds of many millions to one against either of Columns 1 and 3 being randomly chosen from the true distribution, provided every individual male wage-earner had as good a chance as any other of being chosen.

But such was not the intention of the sampling. The wage-earners were not selected individually from the census schedules but as industrial classes. The random nature of the sample was intended to be random industries and not individuals. As individuals are by no means randomly aggregated by age into industries, it might be said that in selecting by industries we should test by some χ^2 which would take into account (a) the number of industries used and (b) the degree of selection away from the average age distribution of Canada which each industry exercises. As the second of these items seems incommensurable, it appears impossible to get any precise notion of the age-representativeness of our sample on the χ^2 test; we can only say that it seems on inspection, taking into account the very considerable age peculiarities of industries, to be satisfactorily representative.

With the same object, of determining the representativeness of the samples used for occupations and for industries (Chapters III and IV) the distribution in each case between provinces was found and is given below. Accompanying is the "expected" distribution on the basis of the number of wage-earners in each province. The representativeness attained is rather remarkable in view of the fact that the choice of industries and occupations was made solely on the basis of size. It seems that the Prairies are somewhat under-represented—perhaps because they are less diversified than the rest of Canada—and the Maritimes, on the other hand, seem to show the effect of their very considerable industrial diversification. But these slight differences between actual and expected are not great enough to make an essential difference in the χ^2 test result—it shows for industries a P, the chance of purely random sampling deviation equal to or greater than that obtained, of 0.57 for industries, and 0.98 for occupations.

B.—DISTRIBUTION INTO PROVINCES OF THE 122 INDUSTRIES AND 118 OCCUPATIONS OF THE SAMPLES SELECTED IN CHAPTERS III AND IV, WITH DISTRIBUTION EXPECTED ON BASIS OF WAGE-EARNING MALES IN EACH PROVINCE

Province	Sample of			
	Industries		Occupations	
	Actual	Expected	Actual	Expected
Prince Edward Island.....	1	0.6	1	0.6
Nova Scotia.....	7	5.7	5	5.5
New Brunswick.....	6	4.0	5	3.9
Quebec.....	36	32.3	33	31.2
Ontario.....	48	45.4	46	43.9
Manitoba.....	4	8.0	5	7.7
Saskatchewan.....	4	7.0	7	6.8
Alberta.....	4	7.0	6	6.8
British Columbia.....	12	12.0	10	11.6
	122	122.0	118	118.0

$$\chi^2 = 6.7$$

$$P = 0.57$$

$$\chi^2 = 2.1$$

$$P = 0.98$$

If we calculated χ^2 on the basis of the number of persons in the samples in each province and the number of persons to be expected instead of on the number of industries, we should have no greater percentage error than here obtained, but a very much larger χ^2 would result, due to the increase in absolute numbers. We should in such a calculation obtain a probability of many billions to one against such a sample as we have being representative of the total individual wage-earners in the various provinces. This is once again a reflection of the fact, pointed out above, that the samples obtained are representative of industries and occupations only, not of individuals. The correlations performed, and the conclusions drawn, apply in no way to the totality of wage-earners, but to the totality of industries and occupations. It is, of course, impossible to perform correlations between characteristics of individuals unless those characteristics are tabulated for

individuals. When in the sample of industries, for example, it is found that unemployment is positively related to earnings, the conclusion drawn is that in those industries in which average earnings per week worked are high there is a low percentage of unemployment. This does not prove among other things that a man with long periods of unemployment during the year is likely to have low earnings during such weeks as he has worked. To establish this latter fact we should have to have a table of the distribution of wage-earners into earnings groups, which is not available. Hence, for our purpose it must suffice to obtain a sample representative of industries.

But throughout this monograph and all of the monographs using census data, it has been emphasized that it is the viewpoint of the worker, not of the industry—the individual, not the institution—that the statistics present. Throughout we have claimed that the nature of our data is such as to tell a story complementing rather than duplicating the information of the annual Census of Industry. The sample and correlations between industries, therefore, must be understood to refer to industrial attachments as the wage-earners themselves see them.

The importance of this point has been mentioned elsewhere in this monograph. The report of an employer as to unemployment in his establishment will only take in those men whom he considers still attached, it will tend to exclude those whose unemployment has been of long duration, and for whom there is little likelihood of re-employment. On the other hand the man out of a job continues to state the industry of last attachment in the census; thus it is "industry" and "occupation" as understood by all the wage-earners, at work or out of work, that is used in the discussions of Chapters III and IV as well as throughout the monograph.

APPENDIX 5

CALCULATION ON THE DISTRIBUTION OF THE UNEMPLOYED BY DURATION OF UNEMPLOYMENT

If we equate the zero, first and second moments of the distribution of wage-earners by weeks lost, to those of the normal curve truncated at a distance "d" from its mode, we shall have three equations which may be solved for the area, the modal point and the standard deviation of the uncurtailed normal. As the three equations are rather involved, it is desirable to have tables for their solution. Such tables are given by Karl Pearson in his volume, *Tables for Statisticians and Biometricians*, (Part I, Table XI), for the case when less than one-half of the normal curve is fitted. For the cases where more than one-half the normal curve is truncated a table was expressly constructed.

The figures in Chapter V were obtained by fitting to a distribution in which the week-classes of 40 and over were omitted. Since the number losing the whole year was disproportionately greater at the older than at the younger ages, it was felt that the age-to-age comparison might best be made in this way. The object was to measure the differences in duration at various ages, omitting as far as possible the effects of the fact that a person aged 15 is unlikely to have lost a whole year because he had often not had a whole year to lose, and that thus his average duration is not comparable with that of a man aged 70 who might have been out of work twenty years. It is plain of course that no measure of duration can quite eliminate this prejudicing of the older ages.

In Chapter I a somewhat different method was followed. There the complete normal curve was assumed to represent the entire population and the fitting was performed as follows: The percentage losing no time was looked up in the body of a table of ordinates of the normal curve and the corresponding argument found. The percentage losing no time plus the percentage losing four weeks was then looked up and the argument corresponding to it found. In the same way the percentage losing no time to eight weeks was looked up, etc. These values of the argument formed in all cases a reasonably smooth sequence and were fitted to a least-squares straight line, $y = ax + b$, where y is the number of standard deviations from the mode of the normal curve and x is the number of weeks of unemployment measured from zero; a was taken to equal the number of weeks in the standard deviation of the normal curve and the position of its mode was considered to be at the point where $y = 0$, i.e., at $\frac{b}{a}$ weeks.

In experiments carried out on the fitting of part of a normal curve to the duration distribution of unemployment by the two different methods mentioned it was found that neither method fitted all cases perfectly.

Where unemployment was high the method of moments, which paid no attention to the proportion losing time but was fitted only to the duration distribution of those who *did* lose time, seemed rather well adapted to the data. On the other hand it gave a poor fit in certain cases where unemployment was low.

Quite the opposite was the case with the method of fitting which took into account the proportion losing time. There the curve was very close to the facts where the percentage losing time was small or average and rather less close where the percentage losing time was abnormally great.

Working from these facts, we are led to believe that unemployment brings the people losing time into a grouping about a central duration-point which the unemployed alone determine in cases where the average time-loss is great; where the average time-loss is small, the duration groupings are attracted towards the centre established by the aggregate of employed and unemployed.

Substantiating this finding is the positive correlation, obtained between occupations, of duration of unemployment with frequency. The same high general level of unemployment which has caused the individual to lose his job in the first place makes it difficult for him to get

back again. The greater the percentage unemployment the greater is the pressure of unemployed applicants on any available employment; hence the greater the number unemployed the less the chance of an individual getting a job within one or two weeks, *i.e.*, the greater the chance of his having to wait six months.

Considerable attention has been paid throughout the monograph to the element of duration in unemployment. In almost every chapter some observations have been made, averages calculated, relationships between duration and frequency sought among industries, occupations and ages, less with the object of establishing the last word on the subject, of formulating final principles, than in an effort to find a suitable method of attack on the vital problem of how unemployment is spread among individuals. It is felt that the duration distribution is the most important piece of information concerning unemployment. From the viewpoint of unemployment as a general economic index, like the index of steel production or shares traded on the stock exchange, the main element is the actual number of people out of work from week to week and month to month. In the past unemployment surveys have confined themselves to this one question in enumeration, in tabulation, and in interpretation.

But in the 1931 Census we have had access to duration statistics and these have enabled us to see the viewpoint of the individual wage-earners. We have proceeded on the belief that three weeks of unemployment in each year for the whole working community are very different in their social effect from an entire year of unemployment for one-seventeenth of the wage-earners. A short stretch of unemployment for the larger part of the community can hardly result in the demoralization, the loss of skill or the problem of relief that arises from long idleness on the part of even a few persons.

APPENDIX 6

GRADUATION OF POPULATION, GAINFULLY OCCUPIED, WAGE-EARNERS AND UNEMPLOYED

By the method of divided differences, formulae for pivotal values were obtained at quinquennial age intervals. The formulae follow:—

$$\begin{aligned}
 U_{22} &= -0.01774w_{18} + 0.20946w_{23} - 0.00083w_{28} - 0.00036w_{33}, \\
 U_{27} &= 0.02400w_{20} + 0.10800w_{25} - 0.02400w_{30} + 0.00400w_{35}, \\
 U_{32} &= -0.03131w_{20} + 0.09868w_{25} + 0.02069w_{30} - 0.00371w_{35}, \\
 U_{37} &= 0.00656w_{25} + 0.11681w_{30} - 0.02931w_{35} + 0.00494w_{40}, \\
 U_{42} &= -0.00856w_{25} + 0.08719w_{30} + 0.02631w_{35} - 0.00494w_{40}, \\
 U_{47} &= 0.00586w_{30} + 0.12006w_{35} - 0.03495w_{40} + 0.01806w_{45}, \\
 U_{52} &= -0.00786w_{30} + 0.08394w_{35} + 0.03295w_{40} - 0.01806w_{45}, \\
 U_{57} &= -0.00372w_{35} + 0.02068w_{40} + 0.09870w_{45} - 0.03132w_{50}, \\
 U_{62} &= 0.00401w_{35} - 0.02399w_{40} + 0.10800w_{45} + 0.02400w_{50}, \\
 U_{67} &= 0.00103w_{40} - 0.00437w_{45} + 0.00654w_{50} + 0.19362w_{55},
 \end{aligned}$$

where the w 's represent the number of persons in the various age groups, *e.g.*, w_{18} = persons 18 and 19, w_{35} = persons 35-44.

Intermediate values were then derived by George King's well-known method of osculatory interpolation using third differences.

The adequacy of the Census of Industry's age groupings (mainly 10-year intervals) was tested by grouping Canada males in this fashion, graduating by the above formulae and then comparing the graduated frequency with the numbers in the single years of age which are tabulated in Volume III. It was found that the fit could hardly be improved upon. This gives us considerable confidence in the graduations of gainfully occupied, etc., for though there is no possibility of comparing with the figures for individual ages in their case, there is no reason to believe them less accurate than the graduation of Canada males.

APPENDIX 7

THE DIFFERENTIAL LIABILITY TO UNEMPLOYMENT, BY AGE, INDUSTRY, OCCUPATION AND PROVINCE

An analysis was made to determine the relative importance to an unemployment study of age, industry, occupation and province, for each of the two sexes. This was done by finding the average amount of variation between groups when the classification was performed in different ways. The weighted coefficient of variability of unemployment in census groups when the grouping is by industry, occupation, etc., is given below.

Variant	Coefficient of Variability	
	Males	Females
Industry.....	0.0148	0.3983
Occupation.....	0.5808	0.3013
Province.....	0.1432	0.1003
Age.....	0.0632	0.1319

Thus, of the four ways of analysing unemployment, industry gives, both for males and for females, the highest coefficient of variability, i.e., the difference in unemployment between one industry and another is greater than between one province and another or one age and another. Following industry is occupation and following occupation are province and age in turn. Females show, as is to be expected, a higher age variability than males.

The most striking aspect of the above coefficients is that the variability in industry and occupation is out of all proportion to that of province (indicating locality) and age which is a means of indicating the individuality of workers. The workers are divided into definite classes not by where they happen to be or who they are but by the industry in which they are engaged. As pointed out in the text, occupations are merely the supply side of industry and partly at least created by industry. They are less differentiated than industry because an occupation supplies more than one industry.

Because unemployment varies so little from age to age a difference of given amount between ages will have more significance than one of the same amount between industries, say.

Since these figures give the relative significance of the various classifications with regard to unemployment they would be a consideration in determining the premium to be paid in a scheme of unemployment insurance.

The greatest variance is shown by industry and the least by age. But unfortunately for the fixing of premiums, age is a definite quantity for a given individual at any time, while industry is far less so. A man's industry may change at any time; and in any case a sufficiently vigorous classification of industries for monetary purposes is difficult to attain. Hence, it would be very difficult for a government to collect premiums differentiated by industries in the way that Life Assurance companies collect premiums graduated by age. On the other hand the small amount of variance between ages as compared with that between industries makes it seem too great a refinement to pay attention to the former if the latter is neglected.

Following is an example of the calculation performed with regard to age for males:—

Age Group	Rate of Unemployment, June 1 (1)	Weight (wage-earners in group) (2)	d = Deviation of (1) from Its Mean (3)	d ² (4)	fd ² (5)
Under 17.....	19.36	75,275	-1.51	2.280	171,627
18-19.....	23.14	107,926	2.27	5.153	556,143
20-24.....	22.62	308,351	1.75	3.063	944,479
25-34.....	20.73	539,145	-0.14	0.020	10,783
35-44.....	18.41	437,893	-2.40	6.052	2,650,128
45-54.....	20.08	327,464	-0.79	0.624	204,336
55-64.....	23.16	103,571	2.29	5.244	857,706
65-69.....	27.25	39,461	6.38	40.701	1,606,221
70 and over.....	26.15	23,174	5.28	27.878	646,045
		2,032,260			7,647,530

$$\Sigma^2 = 3.7817$$

$$\Sigma = 1.9446$$

$$\frac{\Sigma}{m} = \text{coefficient of variation} \\ = .0932$$

The coefficients of variation between provinces at the different ages were calculated in a similar manner, as the example below for the age group "under 17" shows.

Province	x	f	d	d^2	fd^2
Prince Edward Island.....	7.52	652	-11.64	140.19	91,403.88
Nova Scotia.....	21.63	3,707	2.27	5.15	19,091.05
New Brunswick.....	20.47	2,901	10.11	102.21	296,511.21
Quebec.....	19.17	27,005	-0.19	0.04	1,080.20
Ontario.....	16.74	24,895	-2.62	6.86	170,779.70
Manitoba.....	21.31	4,237	1.95	3.80	16,100.00
Saskatchewan.....	23.08	4,007	3.72	13.84	55,456.88
Alberta.....	21.18	2,856	1.82	3.31	9,455.86
British Columbia.....	21.67	5,015	2.31	5.34	26,780.10
					686,856.98

$$\Sigma^2 = 9.122$$

$$\Sigma = 3.0198$$

$$\frac{\Sigma}{m} = 0.1560$$

where x = percentage unemployed June 1, 1931;

f = number of wage-earners under 17 in various provinces;

d = deviation of x from its mean.

APPENDIX 8

MAXIMA AND MINIMA BY THE METHOD OF LEAST SQUARES

If $y = ax^2 + bx + c$, then $\frac{dy}{dx} = 2ax + b$ and $\frac{dy}{dx} = 0$ for a maximum, hence the maximum ordinate is at the abscissa given by $2ax + b = 0$, i.e., $x = -\frac{b}{2a}$.

If we are fitting $y = ax^2 + bx + c$ to the series of values, $x_1, y_1; x_2, y_2$; etc., we have, as equations for the valuation of constants in a least-squares fit:—

$$\begin{aligned} a\sum x^2 + b\sum x + nc &= \sum y \\ a\sum x^3 + b\sum x^2 + c\sum x &= \sum xy \\ a\sum x^4 + b\sum x^3 + c\sum x^2 &= \sum x^2y \end{aligned}$$

The ratio $-\frac{b}{2a}$ can be expressed, without a complete solution of the equations, in the determinantal form:—

$$\begin{array}{c} a \qquad \qquad \qquad -b \\ \left| \begin{array}{ccc} \sum x & n & -\sum y \\ \sum x^2 & \sum x & -\sum xy \\ \sum x^3 & \sum x^2 & -\sum x^2y \end{array} \right| = \left| \begin{array}{ccc} \sum x^2 & n & -\sum y \\ \sum x^3 & \sum x & -\sum xy \\ \sum x^4 & \sum x^2 & -\sum x^2y \end{array} \right| \\ \text{i.e.,} \\ -\frac{b}{2a} = \frac{1}{2} \frac{\left| \begin{array}{ccc} \sum y & \sum xy & \sum x^2y \\ n & \sum x & \sum x^2 \\ \sum x & \sum x^2 & \sum x^3 \end{array} \right|}{\left| \begin{array}{ccc} \sum y & \sum xy & \sum x^2y \\ n & \sum x & \sum x^2 \\ \sum x^2 & \sum x^3 & \sum x^4 \end{array} \right|} \end{array}$$

and expanding each determinant by the top row:—

$$-\frac{b}{2a} = \frac{1}{2} \frac{\sum y (\sum x \sum x^3 - (\sum x^2)^2) - \sum xy (n \sum x^2 - \sum x \sum x^3) + \sum x^2y (n \sum x - (\sum x)^2)}{\sum y (\sum x \sum x^4 - \sum x^2 \sum x^3) - \sum xy (n \sum x^3 - (\sum x^2)^2) + \sum x^2y (n \sum x^2 - \sum x \sum x^3)}$$

In the special case when the abscissae are equally spaced and we choose the point zero so that they are symmetrically placed about it, $\sum x$ and $\sum x^3 = 0$ and the abscissa of the maximum reduces to the simple form:—

$$-\frac{b}{2a} = \frac{1}{2} \frac{\sum y (\sum x^2)^2 + \sum x^2y (n \sum x^2)}{-\sum xy (n \sum x^4 - (\sum x^2)^2)}$$

In either case the value sought may be easily obtained on the machine as the quotient of two weighted sums.

For the modal point of the distribution of weeks lost by those losing time, found on this method, the following particular formula was used:—

$$\begin{aligned} \text{mode} = & \frac{256w_{1-8} + 72w_{9-16} + 200 w_{17-24} + 128 w_{25-32} - 144w_{33-40}}{-10w_{1-8} + 5w_{9-16} + 10w_{17-24} + 5w_{25-32} - 10w_{33-40}} \end{aligned}$$

where w_{1-8} , etc., are the numbers losing 1-8 weeks, etc.

APPENDIX 9

MAXIMA AND MINIMA FOR UNEQUAL INTERVALS OF ARGUMENT

In the census age groupings of wage-earners, earnings and unemployed, the intervals are uneven and the ordinary formula for the mode does not apply. The procedure used was the fitting of a second degree parabola to the three groups about the mode, and the obtaining of its maximum. If the maximum is in the group 20-24, for example, the fitted curve is: $y = \alpha + \beta x + \gamma x^2$, and we have:—

$$w_{18} = \int_{18}^{20} (\alpha + \beta x + \gamma x^2) dx$$

$$w_{20} = \int_{20}^{25} (\alpha + \beta x + \gamma x^2) dx$$

$$w_{25} = \int_{25}^{35} (\alpha + \beta x + \gamma x^2) dx$$

where the w 's represent the number of persons in the various age groups. From these three equations the ratio $-\frac{\gamma}{2\beta}$ is found by the determinantal method of Appendix 8, the result being:—

Mode in the 20-24 group:—

$$\frac{2000w_{18} - 1094w_{20} + 147w_{25}}{75w_{18} - 44w_{20} + 7w_{25}}$$

Mode in 25-34 group:—

$$\frac{280w_{20} - 220w_{25} + 80w_{35}}{8w_{20} - 7w_{25} + 3w_{35}}$$

Mode in 35-44 group:—

$$\frac{45w_{25} - 80w_{35} + 35w_{45}}{w_{25} - 2w_{35} + w_{45}}$$

Mode in 45-54 group:—

$$\frac{55w_{35} - 100w_{45} + 45w_{55}}{w_{35} - 2w_{45} + w_{55}}$$

Mode in 55-64 group:—

$$\frac{190w_{45} - 410w_{55} + 440w_{65}}{3w_{45} - 7w_{55} + 8w_{65}}$$

Mode in 25-44 group (for occupations, in which tabulations give 25-44 as a single group):—

$$\frac{1000w_{20} - 400w_{25} + 300w_{45}}{24w_{20} - 11w_{25} + 10w_{45}}$$

APPENDIX 10

SOME NOTES ON ECONOMIC THEORY AND THE CENSUS OF UNEMPLOYMENT

In the preceding pages a large number of conclusions are to be found as to the nature and incidence of unemployment, all deduced, more or less directly, from the material of the Canadian Census of 1931. It would be interesting to see to what extent these conclusions agree with the opinions on the cause and cure of unemployment expressed by the leading minds in the contemporary economic world. One question that arises is: "To what extent can the deductive method foresee and predict the results of a statistical investigation?"

The Personal Element in Unemployment—Qualitative.—There is a large group of books giving the effects of unemployment on the men and women who constitute the reality corresponding to the problem (abstract) of unemployment which economists discuss. Written admittedly from the lay point of view, they discuss the effects of trade unionism, of unemployment insurance, of employment agencies, etc., as these things affect the individual. Including often excerpts from conversations with unemployed men, they discuss the social problems of the loss of skill and the decline of hope with continued unemployment and they give the economic opinions of the unemployed themselves rather than the economics of unemployment; hence they are sociological rather than economic studies.

Working on a purely impressionistic, non-statistical basis, Wight Bakke's *The Unemployed Man* is a valuable book of this class. The writer made a study of the unemployed in the Metropolitan Borough of Greenwich (London) with the object of finding out how unemployment insurance fits into their daily lives and activities and how far it aids or retards their efforts to find employment as they realize the hopelessness of the situation. He concludes from his personal observations that the fact of the unemployed drawing benefit in no way weakens their effort to find work. *The British Attack on Unemployment* published by the Brookings Institution, written by A. C. C. Hill and Isador Lubin, follows the history of the treatment of unemployment from the days when an unemployed worker was looked on as a criminal or a pauper, to the present highly developed placement and insurance system. The authors, like Bakke, do not believe that labour has lost mobility through the system at present in force in Great Britain or that the recipients are in any way harmed by the benefits they draw.

A. C. Richmond writing in the *Nineteenth Century* of January, 1938, says that since unemployment is here to stay we must see in what way we can prevent those affected from feeling the suffering which it involves. He suggests the use of small plots of land on which unemployed workers, particularly those beyond the ages where re-employment is likely, could maintain their morale, and in addition derive economic benefit. Handicraft centres, unemployment clubs, and, for long-term policy, the remodelling of our towns to make them places of recreation as well as the places of work for which they were originally designed, are advised.

Men Without Work, A Report Made to the Pilgrim Trust is a record of the investigators' personal interviews with twelve hundred of the "long unemployed" (i.e., those out of work for more than a year) in six English towns. The attempt is not to reveal information about the statistical facts of unemployment as obtained from the sample—these are taken rather as background while the book concerns itself mainly with the psychological, moral and physical consequences of unemployment. Among scores of other matters, it describes the disastrous effect on domestic harmony of idleness on the part of the husband, so that an abnormal proportion of the long unemployed were living apart from their families. It describes the intense interest, particularly among the Liverpool unemployed, in gambling; how day after day the chances of individual teams were weighed as the one serious matter in life; how the fairness of pools was contrasted with the supposed injustices of the Labour Exchanges; how the man lucky enough to win money in the pool acquired thereby a certain social standing and was listened to with respect when he voiced opinion on any subject whatever. It found that those men who had previously worked for any long period were always dissatisfied with their dole status, and on the whole made persistent efforts to find work, while on the other hand those who had only worked for a short

time or not at all, these usually being the younger unemployed, contained a very great number of "work-shy" cases. The investigation has been carried out with great care and skill, and the result is a unique achievement.

The Personal Element in Unemployment—Quantitative.—A second class of books on unemployment is constituted by research of a statistical nature on the unemployed by individuals or small groups. Working on a small scale these investigators can hardly collect more than a very small sample, and their tables are bound to be affected by such accidents as the locality which they happen to choose, the occupational stratum in which their sample happens to fall, etc. *Occupational Abilities* by N. W. Morton is a good book of this type, in which the author is very cognizant of the limitations of his procedure. Not only is the sample small, but each man who formed part of the study presented himself quite voluntarily. This is a difficulty with which an official body such as the Dominion Bureau of Statistics is not concerned at all, by reason of its complete coverage of the field and the powers conferred on it by the Statistics Act. Taking these difficulties into account the results obtained are not uninteresting; they show slight superiority on the whole for the employed groups in the various intelligence and other tests performed. In *Ten Thousand Out of Work* Ewen Clague and Webster Powell announce the result of an investigation in which approximately 10,000 applicants for work relief were interviewed as to their family circumstances, employment history, education, etc. Miss Margaret Hogg in *The Incidence of Work Shortage* made a fairly detailed survey of the city of New Haven, Conn., finding among the families questioned that males suffered more heavily from unemployment than females, single men than married, foreign born than native born, young and old than middle-aged. The census figures show similar results on these points, but through their greater detail they supply the basis for a fuller theory.

In general a reading of the books of this class shows to how great an extent the individual field investigator in statistics, hampered by the fewness of the cases he can cover, feels obliged, to the extent to which he is conscientious, to condition his conclusions by referring to the large probable error due to his sample and is likely to terminate his work with a number of expressions of likelihood rather than conclusions.

Sir William Beveridge has been outstanding in the study of unemployment and unemployment insurance for at least thirty years. He has based his work principally on the experience of the unemployment insurance scheme in Great Britain whose definition of unemployment is not co-terminous with that of the Canadian Census but his results are on many points the same as those of the present monograph. He concludes (in *An Analysis of Unemployment in Great Britain*—a series of three articles in *Economica*; I, Nov., 1936; II, Feb., 1937; III, May, 1937) that the vastly different rates of unemployment that have always existed between different parts of the country indicate that immobility among the unemployed is a factor to be reckoned with; that while females show about half the rate of unemployment of males the main cause of this is their more favourable location in industry; that at the older ages men are little more likely to lose their jobs than at younger ones, but they are very much less likely to get back into industry once they have lost their jobs.

Opinion on Unemployment.—An investigation of the opinions of leading trade unionists was made in Great Britain in 1928, and the results were published in a book *Unemployment—Its Cause and Cure* by W. A. Appleton. The number of causes to which unemployment is attributed is as great as the number of cures suggested. Causes given ranged from tariffs to the capitalistic system. The recommendations are for lower governmental expenditures, lower taxes, lower rates of interest, and emigration from Great Britain. The book ends by stressing the importance of industrial and commercial expansion, the claim being that there is no alternative to expansion other than unemployment and forced reductions of population. Similar in conclusion is *Unemployment and Prospects for Re-employment in Massachusetts*, a publication of the Graduate School of Business Administration of Harvard University, which states that the solution of the unemployment problem in Massachusetts is an expansion of business activity which would have the effect of re-absorbing the unemployed. The present monograph shows that with, say, 20 p.c. out of work, a 25 p.c. expansion is not a sufficient condition for the mopping up of all unemployment because of the way labour is recruited during a boom from "own account" occupations.

Unemployment in Relation to Business.—In the *Review of Economic Statistics* for February, 1937, an article by Professor Sumner H. Slichter, *The Period 1919-36 in the United*

States; Its Significance for Business Cycle Theory announces the preliminary findings of a sub-committee for research on the trade cycle. Four cycles are noted in the post-War period with the turning-points—1920-21, 1923-24, 1926-27 and 1929-35. Professor Slichter lays great stress on the concept of the "technical position of business" and emphasizes the importance of keeping it strong. Presumably the technical position of business would be considered strong when stocks of materials in the hands of producers are not too large to enable them to defer purchases of replacements for any very long period; when there is a suitable balance between the amount of money seeking investment and the amount of investment taking place; when there are no large holdings of finished products in weak hands, *i.e.*, in hands likely to have to liquidate in the face of a small price decline.

It seems to be implied throughout the article that we are still far from the attainment of a complete knowledge of the mechanism of the business cycle, and still farther from the ability to control it.

Technology and Unemployment.—*Mechanization of Industry* by Harry Jerome, published by the National Bureau of Economic Research, goes in great detail into the extent and effects of the application of machinery and automatic processes in the various branches of industry in the United States. The writer is optimistic about the future, believing on the one hand that there is not likely to be mechanization running beyond control, and on the other that the continuance of mechanical progress is unlikely to be abruptly terminated as some fear. He seems to believe that although there is some tendency for highly skilled trades to be eliminated by mechanization the average level of skill has been and will continue to be raised.

Mr. Jerome does not believe that there is a tendency to the creation of an increasing permanent body of unemployed as a result of mechanization. Many economists would take issue on this point. It is generally believed that dislocations in the division of labour, which are theoretically independent of, but actually accompany, the use of machinery, are definitely related to unemployment. In their book *Can Governments Cure Unemployment?* Norman Angell and Harold Wright take this view; on the Vermont farm of a hundred years ago there could be no unemployment because everyone was independent, was his own employer and himself used the products of his labour. If there was "overproduction" (which could only happen momentarily) no problem arose; the producer-consumer simply decreased his efforts for a while.

In *Machinery, Employment, and Purchasing Power*, published by the National Industrial Conference Board, Inc., a large number of facts are arrayed from which the conclusion is drawn that machinery increases rather than decreases employment. According to the writers there is no sign that machinery adds to the intensity of either cyclical or seasonal unemployment. In defence of this conclusion it is pointed out that there is actually a long-term increase in the percentage of the population classed as gainful workers. This last statement is true. Census figures show, in Canada as in other advanced countries, a greatly increased number of persons in the wage-earning classes, but it is also true that they show a very much larger number of unemployed.

Opposing this thesis of the National Industrial Conference Board is the implication of Wladimir Woytinsky in the International Labour Office publication *Three Sources of Unemployment*, where he gives as one of the three sources the technological one, stating that even in 1929 when the economic position of the world was very good, there were more unemployed workers in industrial countries than there usually were during times of depression before the War—in short, some of the labour has been eliminated from the production process.

Unemployment in the Classical Economics.—But Woytinsky does not believe that technology is the sole cause of unemployment. He states that the unemployment which has come into existence since 1929 is due entirely to a falling-off in industrial production, which falling-off in production he refers to as the economic source. The nature of this economic source, and even its existence, has been the subject of keen discussion among economists.

According to the equilibrium theories which for some generations have constituted economic orthodoxy, there could be no unemployment in a free market. Such beliefs were expressed in the maxim that "supply creates its own demand" and, more academically, "the current wage is such as to equalize the marginal demand for labour and its marginal disutility". On this theory such idleness as arose from sickness, seasonality, the individual worker preferring living on his savings to working, or his having finished one job and not yet found another, could be accounted

for, but no other. Permanent, involuntary unemployment, such as undoubtedly exists in addition to all the cases of unemployables and of dishonest persons on the relief rolls, was never discussed as a possibility. The classical view is put by Mill as follows:*

"What constitutes the means of payment for commodities is simply commodities. Each person's means of paying for the productions of other people consist of those which he himself possesses. All sellers are inevitably, and by the meaning of the word, buyers. Could we suddenly double the productive powers of the country, we should double the supply of commodities in every market; but we should, by the same stroke, double the purchasing power. Everybody would bring a double demand as well as supply; everybody would be able to buy twice as much, because everyone would have twice as much to offer in exchange."

All this is true, according to Marshall, the outstanding neo-classicist, except that men may not choose to use their power to purchase. After describing what happens in a depression, he says that the cause of depression is lack of confidence. If people simply had confidence and kept on producing, no glut or over-production could possibly arise. But the question one asks to-day, when depression has become so regular a phenomenon, is: "What causes the lack of confidence in the first place?" There is room for the belief that economic causes act as well as psychological ones.

A very different attitude from Marshall's is taken toward the underlying assumptions of the classical view by a not unsympathetic critic, Paul Douglas, in his *Theory of Wages*. After listing as the assumptions of marginal productivity theory the mobility of capital and labour, the atomistic nature of the employment market, etc., assumption number 7 states that all labour finds employment. Comment is made on the failure of the classical economists to recognize the possibility of unemployment, on their proving, in fact, that unemployment can not exist in order to bear out the doctrine (basic in their scheme) that over-production is impossible. Douglas himself later in the book uses the marginal-productivity theory for a solution of the problem of distribution—where indeed it seems to give a valid (partial at least) answer to that difficult question—but he does not apply it to the problem of unemployment, for it is plain that we can not explain unemployment by a theory whose first corollary is that it does not exist. Douglas asserts that the orthodox school describes a part of reality; that there is no objection to such a partial description as long as it is not claimed to represent the whole.

Money as a Cause of Unemployment.—Mr. R. G. Hawtrey believes that the cause of economic depression is in the credit system.† By a sufficient contraction of credit, the world's bankers could at any time provoke a depression. Such matters as tariffs, which are blamed by other writers, are dismissed briefly as merely aggravations rather than as causes of depression. He calls for a sufficient expansion of the currency to bring prices to pre-depression levels. Stabilization must be in terms of prices of goods—no object is achieved in stabilizing in terms of gold so long as gold itself remains unstable. The various schemes for governmental works during depression that have been advocated as cures for depression Hawtrey finds of use only in so far as they involve the creation of credit that would not otherwise be created. He objects to the proposals of Keynes and others, who see in public works the cure of depression through the distribution of purchasing power in the form of wages, claiming that public works, financed by the creation of credit, are a vehicle of inflation and the inflation would be quite as useful without the actual construction. It is part of Hawtrey's view that industry must be made and kept profitable if we are to escape from depression. Thus he says with regard to a rise in wages, that though it would stimulate demand, it would do so only by increasing cost, and that the inflationary process which is recommended throughout would be interfered with in its normal tendency to increase profits.

The shortening of hours as a means of spreading available employment over a greater number of individuals is criticised as showing want of faith in the ability of the monetary cure to solve the problem, though its usefulness as a temporary measure is admitted.

Hawtrey carries his interpretation of post-War economic history in terms of the dearness and cheapness of money to extreme lengths. When finally he says that the solution of the trade depression lies in each country's adjusting the purchasing power of its currency so as to obtain an

*Quoted by Alfred Marshall in *Principles of Economics*.

†*Trade Depression and the Way Out*, by R. G. Hawtrey.

equilibrium between prices, wages and debts, the question is suggested whether, as between prices and wages, at least, the expansion or contraction of the monetary unit will necessarily secure equilibrium.

Corresponding to the viewpoint of Hawtrey in England is that of Irving Fisher in the United States. He suggests* a method of stabilization (of prices) suitable to the banking set-up of the United States. A Commission on Stabilization would secure from the Treasury short-term United States Government 3 p.c. bonds; it would offer these bonds to the national and state banks, and would receive a credit for deposits. The bonds would become the property of the banks, and would enable them to increase their loans and investments thus creating new purchasing power for the public, and raising the price level. If the price level became too high, the process could be reversed. This solution is based on the belief that the depression was caused solely by the necessity for liquidation forcing prices down; that this in turn caused more liquidation (directly in the cases of holdings on margin, indirectly in other cases) and even lower prices; in short, the vicious spiral of deflation. The object of all policy should be greater flexibility in the debt structure, and most important of all, a dollar whose value in terms of goods shall be constant from month to month and from year to year.

This is also the opinion of Carl Snyder of the Federal Reserve Bank and both men emphasize the necessity for good statistics in the applying of stabilizing measures. Among the other expedients which are important, though secondary to monetary adjustment, are the reduction of cost by lower taxes and tolerance of combinations; the encouragement of debt-formation in the shape of preferred and common stocks rather than of bonds (if bonds are to be used, perpetuums rather than fixed-maturity ones should be favoured); the use of receiverships deferring or avoiding liquidation; debt- and wage-scaling in the face of lowered prices, etc.

The money theory of Fisher is largely based on his equation of exchange ($MV = PT$, where M is the amount of money, V the velocity of circulation, P the price level and T the number of transactions). According to the Fisher-Snyder way of thinking, the possibility of controlling M by central bank action gives us a way of controlling P , provided V and T remain constant. The question has been asked whether a change in M would not have some neutralizing effect on V and on this point there is no general agreement among economists.

Keynes does not believe that a mere lowering of the rate of interest by making money more plentiful will solve the problem of the trade cycle. Liquidity-preference, on which he lays great stress throughout *The General Theory of Employment, Interest, and Money*, is the element that is so hard to deal with. After the first shock of the crisis has passed off, a drop in the rate of interest is a help and probably a necessary aid to recovery, but temporarily at the moment of collapse there is no rate of interest low enough to maintain investment. The marginal productivity of investment is controlled by the psychology of the business world and there is no simple way of reviving it. He concludes that when confidence falls so low that investment has fallen almost to zero, governments should undertake investment on their own account in public works.

Debt in Deflation as a Cause of Unemployment.—A. Loveday† emphasizes the role of money in so far as it operates through a rigid debt structure. When contracts are binding over long periods there is a shifting of real income and real purchasing power in favour of those contractors who have money claims and this shifting is of very serious amount. It is, further, the ease that as industry becomes larger and larger in its scale of operations, and as it comes to be carried on more and more by wage- and salary-earners who can not invest their savings in themselves but must buy securities, then to the extent to which such people prefer fixed-interest bearing obligations to industrial shares the rigidity of the financial system is increased. We have, in short, an evil which has increased with the proportion of economic activity carried on with borrowed capital. If a man invests a sum of money of his own saving, earned perhaps when prices were high, in business and if the price of his product declines, then all that happens is that part of the investment is written off—he is no longer as rich as he thought he was—and the adjustment is very simple. But when the capital has been borrowed there is no possible way of writing it off; if payments of interest at least are not maintained bankruptcy and unemployment occur. This line of thought brings us back to Irving Fisher's suggestion that profit-sharing equities be encouraged in debt-formation rather than bonds.

**Rooms and Depressions*, by Irving Fisher.

†*Financial Organization and the Price Level*.—*Economic Essays in Honour of Gustav Cassel*.

In a country such as Canada, recently opened up, in large part with outside capital, the element of rigidity which debt in any case introduces was intensified by foreign exchange differentials—these differentials being themselves brought about through our need for foreign exchange to pay bond interest. Students of Canada's debt structure have pointed out its great rigidity, and hence our position of vulnerability before world business fluctuations. Our position in this respect has been intensified by the specialization of our industry, now less narrow than it was a few years ago.

Rational Behaviour and the Classical Economics.—There has been discussion of the possibility that classical economics fails because it postulates rationality. Frank D. Graham* asserts that to the extent to which business men are not guided by strictly rational motives, to the extent to which they allow their calculations to involve fear, hope, etc., the situation which the classical theory proves will be the pivot of stable equilibrium; full employment of all resources will be replaced by a situation of only partial employment of resources. And he believes that the events of the past few years in particular show that business men will act either on their own irrational fears, or through an anticipation of irrational fear on the part of others.

The Effect of National and International Politics.—In *The Great Depression* Lionel Robbins expresses the belief that the depression is due to dislocations in the capital markets ultimately traceable to the Great War, to the tying-up of international trade, and most particularly to the intervention of the State in industry through protective tariffs and other means. His cure is the restoration of the free market, including the abolition of rigidities in labour remuneration due to trade unions and unemployment insurance, the removal of restrictions to price movements imposed by cartels and trusts, which he claims are the result of state policy indirectly encouraging rigidities. Whether rigidities are really caused by state action would determine whether they would disappear if the state withdrew its interest in industry; many believe that the State in practice actually restricts rather than fosters monopoly. Also the restoration of free trade has too many opponents to have much prospect of realization in the present world political situation. Even if unemployment insurance were discontinued, trade unions and public opinion would keep a floor under wages; in addition, Keynes' argument that high wages are essential to the sale of the product is applicable; furthermore, the entire argument on this point, of both Pigou and Robbins, that lower wage levels would remove unemployment, depends on a certain level of the elasticity of demand for labour, the existence, in practice, of which is not regarded as having been satisfactorily established.

Similar in its emphasis on the political aspect is *International Unemployment* (M. L. Fledderus, editor) which gathers up a good deal of evidence to show that unemployment usually comes to a country from abroad; that countries trading heavily with one another show greater and less amounts of unemployment at the same time. The conclusion is that nationalism, in preventing economic co-operation, is responsible for that disturbance in international trade which is at the root of the present lack of full employment.

The Orthodox School To-day.—In the background of A. C. Pigou's exposition† is the implication that wages are fixed by labour, which insists on a wage determined partly by tradition, partly by the extent of its bargaining power; after the wage is fixed the employers make their calculations and employ all the labour at the set wage that they can put to work with profit.

To this point of view Keynes takes strong opposition. He says of Pigou's book that even its title is a misnomer. It really concerns itself according to him not with unemployment but with how much employment there will be when the conditions for full employment are satisfied, given the supply function of labour.

Keynes implies the absurdity of saying that the two million unemployed of England were simply holding themselves off the labour market. He differs from earlier economists by starting off with the assumption that unemployment does occur, real unemployment, both of labour and of capital, and shows that a state of equilibrium can exist in which very much less than the total willing resources of society are occupied in processes of production.

The Relation between Savings and Investment.—To show this Keynes has to split the circle of classical economic reasoning, which he does in somewhat the following fashion:

In order that there may be equilibrium at the point of full employment it is necessary that the total income of the community be disposed in one of two ways—either in consumption or

**Economic Theory and Unemployment.*—*Economic Essays in Honour of Gustav Cassel.*

†*The Theory of Employment.*

else in the production of new equipment which will ultimately produce consumption goods. If this is the case workers will give themselves employment both with their savings and with their spendings. In an undeveloped economic community savings are small and the need for investment is pressing. But with the rise of the standard of living and with the accumulation of more and more capital goods there will arise a state of affairs where more and more will be saved and investment will be less and less profitable.

Now, according to theory, interest, which is the reward for waiting, i.e., abstinence, comes in here to equilibrate the increased amount of saving with the decreased profitability of investment by falling steadily until demand and supply of capital are equated. But at this point Keynes separates from the classical economics. The amount of saving which goes on at any time, according to his *General Theory*, is due not to the rate of interest, but to the level of individual incomes. One can hardly avoid saving the larger part of an income of a million dollars a year, but one can hardly avoid spending the larger part of one of six hundred. In neither case is the rate of interest the primary force deciding the proportion spent.

Further, if interest falls in such a way as to remain equal to the marginal efficiency of capital, i.e., to the profitability of new investment, then why did it happen that, in 1932 when no kind of new investment was profitable without exceptional skill or good fortune, the rate of interest did not go down to zero?

The answer is in Keynes' new statement of the function of interest. Suppose the community desires to save a very large amount of money, larger in fact than the total (assumed inextensible) stock of money available, then it is plain that everyone who wishes to put money under his mattress will not be able to do so. At the same time there are some people who require liquid cash more than others, perhaps through approaching maturing obligations, or a feeling of "bearishness" with regard to the market or merely through general nervousness. It is between the parties needing cash and the limited amount of such cash available that the rate of interest enters as an equilibrating force. Interest becomes, thus, not a premium on abstinence, but a premium on not-hoarding.

Now Keynes believes that the entire structure of the classical economics is based on the assumption of a special relation between the prevailing rate of interest (determined by liquidity-preference, etc.) and the marginal profitability of investment, viz., their equality. These two elements need not be, and in general theory are not, equal; when the first is higher we have a depression, when the second is higher a boom.

Keynes' approach has been highly praised and severely criticised. Professor Frank H. Knight* asserts that Keynes' classical economics is but a straw man created for purposes of argument. He attacks on the ground of unbiased assumption, claiming that the involuntariness of unemployment, which Keynes assumes, is not apparent, that in fact the conclusion is a deduction from the principles of the system which he sets up.

According to Keynes a boom occurs when the current rate of interest is lower than the (anticipated) marginal productivity of investment. The boom comes to an end when the rate of interest, which during the boom period has been rising, at last catches up with the profitability of new investment, and business pessimism replaces business optimism. Enterprises which at an earlier date were considered profitable with money at 6 p.e. are now considered unprofitable even though money is down to 3 p.e. The rate of interest follows the marginal productivity of investment downward; but since there is a "conventional" rate of interest below which lenders are not willing to advance money, it is not possible for the price of capital to come down immediately to the return on its investment. It is, in fact, necessary for investment to regain its profitability. This can only happen through the attainment of a state of relative scarcity, such scarcity arising as a result of the obsolescence and the physical deterioration of existing plant. When the process has gone to the point where the rates of profit and interest again meet, new construction is undertaken.

To put the viewpoint of the present monograph in economists' terms, one might say that the labour-asset of the industrial machine reacts to the cycles in the same way as the capital-asset. During the time of boom when the process of capital construction, and hence of increasing division of labour, is at its height, it was found that labourers are drawn from farming operations, particularly from subsistence farms where there is small prospect of profit from expanding

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industry's demand for raw materials, into the wage-earning class where they are liable to unemployment, along with the capital which they are building and operating, in the subsequent period of depression. Such as have no work will withdraw from the machine processes and in many cases, as a comparison of the Censuses of 1931 and 1936 shows, they will find their way back to farms. They will stay in the country while the machinery which was built in the last boom is rusting in the city or in the factory town, until there arises simultaneously a shortage of capital and of labour. The observation that the rural population increases during depression, and decreases during expansion, is made by Cassel in his *Elements of Political Economy*.

Definition of Unemployment as Determining the Approach to Its Study.—It requires no more than a brief survey of the writers above-mentioned to see that they have used different methods of attacking the problem of unemployment, and they have arrived at different kinds of results from those of the census. We can see how the differences of treatment and result arise by considering the definition of unemployment which Keynes adopts on page 15 of *The General Theory of Employment, Interest, and Money*. We can see that his definition corresponds roughly to what one ordinarily considers as a state of unemployment, for if there were full employment, the small fall of real wages specified could not leave an aggregate supply of labour willing to work greater than the present number employed. But a definition in terms of the aggregate does not admit, directly at least, of a quantitative treatment. On page 41 the nature of employment is further considered; it is stated that for the purpose of the analysis "quantities of labour can be made . . . strictly homogeneous . . . we shall call the unit in which the quantity of employment is measured the labour unit".

And this is almost the entire mention we find in the whole book of the employed or unemployed as such. The Bureau's definition, in sharp contrast, was simply the statement of the individual wage-earner that he was not at work on the census date and that he wants to work. The number of such individuals can be readily ascertained.

With such different definitions it is to be expected that different results will be reached. The monograph tried to get underneath generalized concepts; to take the aggregate of the unemployed apart and see of what it is made up; particularly, to find out something about the evenness of the spread of unemployment, i.e., the amount of its turnover. Though unemployment as a business indicator may be only concerned with the percentage of wage-earners unemployed from week to week, or from month to month, there is, in the matter of relief, the maintenance of morale and the preservation of occupation skills, a vast difference between one twentieth of the working community losing the whole year and the entire body losing two and a half weeks. The census attempts to find out the incidence of unemployment on occupations and industries, the age structure and the racial origin composition of the unemployed and the different durations of unemployment for people losing time in different industries.

Weakness of the Non-Quantitative Treatment.—Economists frequently refer to these points, but they form no important part of their work. For example, Pigou, in the *General Considerations* which are preliminary to his *Theory of Unemployment* speaks of the importance of considering the size of the lumps which are served out to individual unemployed men, which corresponds to the statistician's emphasis on distribution, but we find no further reference to the matter in the main body of his book.

Pigou says that the unemployment which acts at any time is not the effect of a number of causes summed, but the result of a balance of forces. But if economics studies a situation in which there are a large number of forces balanced against one another, then it is vital to know not only what are the forces acting, but their relative importance. At that point statistical measurement is essential. One example of the failure to use such measurement occurs in the discussion of mobility (*Theory of Unemployment*) where a good deal of involved reasoning leads to the conclusion that with absolutely rigid wage-rates immobility intensifies unemployment, and that with absolutely plastic rates immobility reduces it. Under intermediate plasticity conditions it is admitted that no general conclusion can be drawn, but subsequently (without factual evidence) it is stated that the considerable degree of rigidity in England undoubtedly renders mobility desirable. The criticism of this section is its omitting to present evidence of the amount of rigidity existing. To determine the effects of the amount of rigidity in wage-rates which actually exists, it may be contended, is a statistical task of considerable difficulty; it is nevertheless essential for the completion of the argument.

Pigou brings out the same point in an earlier passage, basing it this time on the assumption that it only requires a reduction of wages to bring about a return to full employment when there is a sudden slackening of demand for labour. He reasons that the cut in wages will be concentrated in the point where it arises if there is no mobility, necessitating large reductions for the few workers affected and that, on the other hand, if there is easy movement the necessary cut in wages can be distributed in small amounts among a large number. The result is true though the demonstration may be attacked. The monograph stresses mobility very strongly. With a complete distribution of unemployment there is in effect a system of unemployment insurance in the sense that the load is borne equally by the entire community.

Joan Robinson (Mrs.) in *Essays in the Theory of Unemployment* sees a need for mobility. She says that when workers fail to move they form separate groups. There would be no harm in this if the tide of prosperity each time flowed back in the same place where it last ebbed, but that is not what happens. Each boom to some extent brings up a different set of industries and calls for a different set of techniques. Therefore individual workers may easily be left grounded unless they have some degree of adaptability.

A case of *a priori* discussion leading to a conclusion at variance with the indications of statistical evidence is Pigou's treatment of the effect of boom wages on the number of wage-earners. He states first the possibility that the wage-earning body is increased in time of high wages by the drawing in of people living on small incomes, on pensions or with friends, or in non-wage-work, which is in accordance with one of the principal findings of the monograph. He then says, however, that there is a contrary tendency in that husbands will be able to support their families without requiring their wives to work, and even that men might work fewer days in the week. The final conclusion is that the two factors are of little importance and in any case balance one another out; therefore the number of would-be wage-earners may be assumed to be unrelated to the employment situation. Since this is opposed to what the figures for Canada, at least, indicate, the subsequent discussion can not be regarded as complete.

Unemployment as Treated by the Census.—As the alternative to formalistic deduction on old assumptions, the monograph begins with a discussion of the nature of the facts which the census reveals and their seeming accuracy; tests were made of their degree of reliability by the consistency which their several aspects show and by comparison with labour union figures and such other information as is available.

It was shown that the census is superior to any other account of unemployment in that, for the single date to which it refers, it represents the answer to a direct question put to every man, woman, boy and girl in the country asking each whether he is at work, and how much time he lost during the past year. The trade unions, the questionnaire to employers which the Bureau sends out each month, the relief figures, the English unemployment insurance figures—none of these alternative sources is as direct as the census. It gives neither the employer's, the trade union's, nor the relief administrator's viewpoint, but the viewpoint of the wage-earner himself. That will be found to be the basic viewpoint also of the interpretation of the numerical facts; the interpreters could look from no special angle so long as they held to census data.

Thus the industries were considered on the basis of the wage-earners they left unemployed. Dislocations in production to which economists of contemporary schools have been drawing attention (*e.g.*, between capital and consumers' goods and services) are analysed as revealed by the employment information. They are not considered in relation to standard economic theory; the attempt is rather to develop what the figures show.

Labour is not taken as homogeneous (Keynes) but in the varied and multiform way in which it actually exists; abstract units of labour are not considered, but units of carpenters', bakers' or machine operators' labour.

Dislocations of production as between different types of goods may be investigated by the incidence of unemployment on industries as given by the census. For unemployment on the census definition is the reflection partly of anticipated production which failed to materialize and partly of capital construction which was completed. It is generally accepted by all schools of contemporary economic thought that these dislocations are important in causing the general symptoms of the depression, and in particular, unemployment. From this point the census penetrates the problem by a detailed study of the persons and industries involved, while economists in general proceed to a refined *logical* analysis of causes.

The method of investigating the incidence on industries is shown in Chapter III where a sample consisting of 122 of the detailed industry groups, representing the nine provinces, was used. (Following the principle of break-down into the greatest detail it was not assumed that "Sheet Metal Products", say, in Quebec, was the same thing as "Sheet Metal Products" in British Columbia; the industry of a given province was taken as the unit in the sample. Thus the sample of 122 was out of a universe of about 2,000 possible provincial industries.) In the course of the analysis the industries of the sample were considered from the point of view of the unemployment which they showed on the three criteria two of which are necessary for its description (number idle at a given moment, number losing any time during the year and average duration of unemployment for those losing time). The industries showing average unemployment (more properly those within an arbitrary range about the precise average) were 24 in number; those above numbered 40, those below, 58. It was found that most of the 24 industries that followed the average amount of unemployment of the country as a whole were in the field of production for immediate consumption—biscuits and confectionery manufacturing, retail filling stations, retail coal and wood, hosiery and knitted goods and furniture manufacturing, including upholstering. These are the branches of the economy which depend most immediately on the effective demand, i.e., on the purchasing power, of the ultimate consumer and, in consequence, we may expect them to suffer from depression to the extent that income as a whole suffers. Into this group crept a few of the more prosperous (in 1931) of the capital goods industries—those (like nickel mining and smelting) that were more fortunate than the average of their class in having exceptional resources and stable or increasing international markets.

Showing greatest unemployment in the industrial scale are iron smelting and building and structures. Showing less than average were industries outside of the reach of fluctuations in the business community—police, defence, postal service, education, health—or such commercial enterprises as are so closely organized in a few corporations that they can keep their help through good times and bad—banking, electric railways, telephone systems, etc. Capital-goods industry immediately dependent on primary production, of which the manufacturing of agricultural implements is an example, suffered very greatly through the decline in the prosperity of its customers; there was to be expected a process of disinvestment in equipment on the part of farmers with the large relative fall in the prices of primary products together with rigid rates of interest.

The depression is said to be caused by a situation in which the production of various commodities has got out of alignment. We see in the census that of all the cross-classifications of the unemployed, that which shows the greatest divergences between different groups in the percentage out of work—as among age, province, occupation, industry, race, etc.—is industry. Industry in the census definition refers to the product of the economic activity—occupation to the place of the individual worker in the process. Productive capacity—in relation to money demand at existing prices—appears to be excessive in housing and farm equipment, for example, and relatively fitted to demand in the various consumption goods industries and in such services as health and education.

The main lesson of the present investigation is that the creation of wage-earners for special work, as in a boom, leads within a short time to unemployment; it also shows (by a comparison of 1931 and 1936 figures) that employment may increase greatly without much decrease in wage-earner unemployment. Public works planned in such trades, in such industries and in such parts of the Dominion, that both in their direct effects on employment and in their secondary effects they result in the re-hiring of labour rather than in the creation of new wage-earners, are to be chosen against works where, say, the labourers attracted will in many cases be farmers or farm hands. The individual is not to be blamed for attempting to get into that branch of industry in which he seems to have the best chance of satisfactory employment at good wages; but the fact that he does so is responsible for the carrying to too great lengths of the process of division of labour in time of boom. During the subsequent depression the process is reversed—labour becomes de-differentiated, as is to be seen from the great variety of previous occupations among persons giving their 1936-census-date occupation as "odd jobs". To stimulate an industry, when the effect will be to encourage individuals engaged in general farming, say, to become machine tenders, is carrying the process of division of labour beyond the point where it is economically justifiable, to a point where it could not permanently exist and where it would have the long-term result of increasing wage-

earnings and increasing the unemployed in a subsequent depression. The task is, therefore, to find schemes to fit those branches of activity in which the greatest number of the unemployed exist. At the same time the normal effect of the depression, to cause skilled workers in the unwanted lines to enter other fields, should be interfered with as little as possible so that in the long run the natural working of the economic system will provide that the division of labour be carried to just the right degree and in just the right direction.

Can any recommendations be made for the reduction of unemployment by using such considerations as these along with census data on the number of persons unemployed in the various classifications? As we look down the list of occupations showing unemployment, we may read (Table 18, page 324) coal miners, plasterers and lathers, lumbermen, labourers in coal mining, brick and stone masons, coal mining haulage workers, drivers and eagers, labourers and unskilled workers and stevedores, structural iron workers in construction and actors, to name 11 occupations showing the worst unemployment in Canada in 1931. Now, like all figures from social statistics, these do not permit of an immediate sweeping conclusion, but they invite study. It will be seen that there are included four of the most important construction occupations, three very important coal mining occupations, the principal occupation connected with lumbering, unskilled workers—a very large number of whom have probably at one time or another been engaged in construction—as well as longshoremen and actors.

It would seem that the longshoremen and actors will have to be given relief or put to some other type of work, for Canada needs no more longshoremen than are required to handle her volume of trade and to put the actors to work would require the establishment of a theatre—a scheme such as the Actor's Project of the W.P.A. in the United States. As for the coal miners, there must be faced the substitution of oil and the very general and increasing use of hydro-electric power. As indicated by the trend of the recent past, we shall in the future use even less coal through oil and electricity becoming more widely available. Once it is decided that there is a permanent surplus force in this, or in any other field, steps might be taken to transfer it to some other activity. The longer the delay, the longer the period that elapses with no aid but money-relief, the greater the demoralization and the fewer the individuals remaining who will have the initiative or the will to re-enter productive activity. We are more fortunate than the English in that we have the invaluable asset of space for transfer from any region threatening to become a "depressed area".

The remaining industry with occupations represented in the group of 11 trades most badly affected by the depression is construction. It has many points of difference from the others mentioned. In so far as construction (of houses at least) is concerned, the market is that fraction of the population of Canada compelled to dwell in conditions below a reasonable level of civilized comfort. It is one industry for whose product there is no likelihood of a substitute being invented; the trades involved are healthy; wages generally represent a good livelihood (in contrast to coal mining) and the product is in no sense a luxury. Furthermore a census study of the unemployed involved shows that they are distributed throughout the country and the need for houses is likewise widely distributed, so that men could be employed where they live. Unlike many other branches of industry the production of houses requires relatively simple tools; hence the expenditure of capital per man employed would be small, an important consideration where it is desired that the bulk of the employment created be direct employment, having the minimum amount of indirect effect on the economic system and involving the smallest possible total expenditure per unit of employment created.

A housing program would not demand the employment of many in supervisory or more skilled capacities who would have to be drawn out of existing industry. For, beside the trades mentioned above, a study would show considerable amounts of labour available in all the other required occupations; unemployed carpenters, for example, numbered 22,314. Even foremen and overseers, showing an average percentage unemployed of 6.24 in all industries have 11.45 p.c. in construction. In 1931 construction workers plus unskilled labourers totalled 45 p.c. of the unemployed.

It also happens to be the case that the industries that would be immediately stimulated by a housing programme are those which next to it have the greatest amounts of unemployment. Lumbering, for example, which showed 39.3 p.c. unemployment in 1931, would be benefited by a strong demand for constructional timber.

The total number of unemployed can only be ascertained at the time of the census, for the questioning of employers, trade unions, etc., fails to reveal all of the labour available. However, the tabulation of replies to the Employers' Questionnaire published by the National Employment Commission shows 44,000 men in other than railway and highway construction in 1929, in 1933 15,000, and in 1936 23,000. No other of the more important industries in the classification showed nearly so great a decrease from 1929 to 1933, or was so far from having recovered its 1929 level by 1936.

It has been pointed out that there is a sense in which there is no labour cost in a relief project. For one of the characteristics of labour as a commodity is that it is dissipated whether or not it is used. This is the thesis of Frank D. Graham (*Economic Theory and Unemployment.—Economic Essays in Honour of Gustav Cassel*). In his words, "It (labour) is either embodied in production as it evolves or it is forever wasted. Regardless of the wages actually paid it would therefore cost nothing to pay for such labour. Any output deriving therefrom would be unalloyed social gain. All discussions of the cost of putting an unemployed man to work are therefore misleading and indeed silly."

Many schemes for the solution of depression involve the great difficulty of requiring the government to intervene directly in production. It is not necessary to go into the objections to such a broad extension of the powers of government. But indirectly, governments may intervene through the regulation of the rate of interest by the national bank and in other ways. Now the "interest" element involved in the production of a loaf of bread, i.e., the interval of waiting by the producer between the mean time of production and the mean time of consumption, is very small; while the "interest" element in the production of a house is very great. If money stands at 5 p.c., and the initial cost of the house is \$5,000, and the house is to be consumed in the course of forty years and we assume that the would-be owner has no accumulated resources and wishes to pay in the course of his occupancy, then the rate per month is \$24.30. But if the repayment is to be by a similar annuity calculated at the rate of 2½ p.c., then the monthly instalment, corresponding to what is otherwise paid as rent, is \$16.40. Hence a lowering of the rate of interest from 5 p.c. to 2½ p.c. would bring into the market for \$5,000 houses those families who are in the \$16-\$24 per month rent group (numbering 116,000 according to the 1931 Census, counting only urban families with wage-earner heads).

A housing scheme such as described is not the only nor necessarily the best method of combating unemployment; it is given as an example of the manner in which the census can be used to supply information on both the human resources available for a project and the utility of it. Road building, forest conservation, irrigation work, etc.; for any of these the census can tell how many men are available in the required occupations, where they are, and how long they have been out of work.

If the solution of unemployment is to be in the encouragement of industry by subsidy, loan, or other means, the important considerations in the choice of activities to be stimulated are that they should be such as to fit the surplus of trained labour available; both the demand for their product and their labour requirements should be widely distributed throughout the country; they should have the minimum effect in raising prices in industries which depend on foreign markets; they should call on the minimum number of men from already operating industry; they should produce goods which will be permanent assets; the raw materials needed should be indigenous. By the combined use of the unemployment and the industrial censuses all of these considerations may be taken into account.

DEPENDENCY OF YOUTH

by

J. E. Robbins

SUMMARY

LENGTHENING OF THE DEPENDENCY OF YOUTH

A study of the earnings of Canadian wage-earners in the last three decennial census years indicates that the average young person on reaching the age of 20 in 1911 had earned twice as much as those reaching 20 in 1931. In the latter year the average accumulated earnings of a person's 'teens were equal to slightly less than one year's earnings of an adult male; in 1921 they had been the equivalent of 1.4 adult years, and in 1911 had equalled two. The actual accumulated earnings of young people on reaching their twentieth birthday under conditions of 1931 were \$892, a sum sufficient to have supported them for two years at the rate of \$37 per month. It might be said that they were independent on reaching the age of 18 in 1931, the age of 17 in 1921, and 16 in 1911.

A comparison of school attendance records in the same three censuses shows that the average child spent two more years at school in 1931 than in 1911. Whereas the child attended school for 6.58 full years under conditions of 1911 (10 months' attendance being taken as a full year), he spent 7.58 years at school in 1921 and 8.55 years in 1931. The same two-year increase is evident in the census records of the number of children attending school for some time during the census years; the average child under conditions of 1911 was enrolled in school for 7.96 years, for 9.13 years in 1921, and 9.89 years in 1931. Thus, the two years of added dependency as revealed by earnings were spent in school.

In 1911, the age for leaving school was 14.38, the age for achieving economic independence 16 years. The former rose to 16.25 in 1931, the latter to 18 years. Thus, there has been a continuous gap of approximately 1.75 years between the age of leaving school and the age when the young person is able to earn enough to support himself. School records of age of pupils in the years since 1931 indicate that the long-term trend is not yet broken. Pupils are remaining in school up to still older ages. If the tendency continues unchecked, young people will in a few years be dependent on parents at the age of 20.

The loss of independence has taken place entirely among young men and boys. Girls have actually gained in earnings while young men up to the age of 25 have lost 35 p.c. since 1911 and 27.5 p.c. between 1921 and 1931.

This loss of the male youth is only partially the result of being replaced in gainful occupations by girls and young women of the same age, females under 25 years of age accounting for only 6 p.c. of the 27.5 p.c. loss during the decade 1921-31, and 7 p.c. of the 35 p.c. loss for the twenty-year period. A greater part of the loss was apparently to women over 25 years of age who obtained their jobs before the young men were old enough to work and have not relinquished them. These older women began at a higher salary than young girls do now and, during the decade 1921-31, were earning from two to five times as much as the younger ones.

Social effects of the increased dependency are suggested by the unusual fall in the marriage rate among the young people between 20 and 24 years of age (20 p.c. for men and 13 p.c. for women) as well as in the 100 p.c. increase in the illegitimate birth rate from 1921 to 1931.

The reduction in the earnings of young men of ages 20-24 between 1921 and 1931 was almost double the reduction for those in the 25-64-years age group, \$233 as compared with \$127. The earnings of the average woman in the younger age group went down \$87 a year while the woman in the older age group gained \$53 over the decade. The loss in the wages of the younger women was offset in part by the greater relative number of young women gainfully occupied, i.e., individuals worked for less but the group as a whole gained.

The drop in average wages for all ages between 1921 and 1931 was probably not a real loss since they fell only 12 p.c. while prices fell 18 p.c. Earners on the whole were probably better off, except for the youngest and oldest workers.

The development of large-scale enterprise has increased the proportion of wage-earners to independent workers. In 1911 only 60 p.c. of the gainfully occupied were wage-earners, but 80 p.c. of the new positions created since then have been in this category, with the result that the young

men have been forced into the labour market where they have been obliged to compete with women and girls for office jobs and with more mature native and immigrant adults for heavier work. Girls and immigrants have obtained more than their share of wage-earning and salaried positions.

An attempt is made to gain a conception of the actual number of boys and young men of ages 15-24 lacking gainful occupation in 1936. The combined percentage of those without work due either to loss of employment or to never having been gainfully occupied appears to be over 16 p.c.; in round numbers, this group approximates 155,000, or one and one-half times the supply of new workers coming of age annually. Since nearly all of this group are non-farm boys, the average length of idleness for boys living in the city appears to be about two years.

Besides these there is the large number occupied on the home farm without making money. About 70 p.c. of farm workers are not receiving wages. These and many who are in school waiting for jobs have to be considered as possible applicants for new positions.

THE COST OF REARING A CANADIAN CHILD TO THE AGE OF INDEPENDENCE

An attempt is made to estimate the cost of different items involved in raising a child to the age of independence. It appears that about \$1,550 is required, under conditions of 1931, to feed a child until he is 18 years of age, while clothing for that same period costs about \$800 and shelter over \$2,000. Health, recreational and social costs total about \$600, schooling about \$750.

The cost of an elementary schooling to the community is \$500 per pupil while a high school education requires about \$1,050. The cost of supporting a student in the universities of Canada is much higher, \$550 being required to pay for one year's schooling. Although only 3 p.c. of the young people attend university, the high cost of such an education raised the average cost to the community to \$690 per average child. When the cost of books and other school equipment as met directly by the parents is added, the total sum required to educate the average child is in the neighbourhood of \$750.

The total cost of rearing a child until his eighteenth birthday is then \$5,750 of which \$4,350 or 77 p.c. is spent on satisfying elementary physical needs, 10 p.c. on health, recreational and social costs and 13 p.c. on education. It costs no more to raise six children and give them an average schooling than to raise seven completely illiterate.

How long does it take the average child to repay society for the cost of his rearing, i.e., how many years does he require to earn an income sufficient to balance the amount expended on him during the period of his earlier dependency? Although the young man would be unable to repay the \$5,750 by the time of his marriage, at the age of 27, the combined earnings of his wife and himself equal at age 31 the principal outlay for their rearing but do not account for the interest which has accumulated thereon. The average man in Canada was earning \$927 in 1930-31, which meant that he would have had to spend his total salary for six years to repay the expense incurred by society in rearing him for his first eighteen years.

In the provinces where there are more children in proportion to the rest of the population, their cost must fall more heavily on the comparatively smaller adult population. This is reflected in the shorter average schooling of children in these provinces. Quebec, which has the largest proportion of its population under 18 years of age (43.27 p.c.) has the lowest average school attendance (7.78 years), while British Columbia and Ontario, with only 30.11 and 34.67 p.c. of their respective populations under 18 years of age have an average length of attendance of 9.15 and 9.20 years respectively.*

Rural families are larger in size than are urban, (3.22 children per average rural family to 2.68 per urban)† but many rural children go to the cities as they reach maturity. This trend is a steady one,‡ 50.14 p.c. of the population at 10 years of age living in rural districts as compared with 41.26 p.c. at the age of 30. It would appear that about 15 p.c. of the rural-raised children become urban dwellers. Since schooling amounts to only 13 p.c. of the total cost of raising children, it is of interest to note that if urban dwellers paid the entire cost of schooling all rural children, they would only be paying the equivalent of the cost of rearing those who in adult years become their residents and supporters.

*See 1931 Census Monograph *Illiteracy and School Attendance*, Chap. VI, by M. C. MacLean.

†See 1931 Census Monograph *The Canadian Family*, Chap. X, by A. J. Pelletier, F. D. Thompson and A. Rochon.

‡See 1931 Census Monograph *The Rural and Urban Composition of the Canadian Population* by S. A. Cudmore and H. G. Caldwell.

SOME CONSIDERATIONS ON THE COST OF SCHOOLING

Although it amounts to only one-seventh of the total cost of raising a child, the cost of schooling is the part which receives the most attention, probably because it is made out of public funds. Chapter III presents some broad considerations to help in judging the propriety of expenditure on schools in recent years.

Estimates, based upon two entirely different standards of measurement indicate that Canada's National Income in 1930 was somewhere between \$4,600,000,000 and \$4,750,000,000. Hence, \$165,000,000, the sum spent annually on the schools in recent years, amounts to only 3.5 p.c. of the annual national expenditure. About 55 p.c. of our annual income seems to be spent on satisfying the primary wants of man—food, clothing and shelter—including a certain amount of indirect taxes. Direct taxes, from which the greater part of school funds are obtained, amount to 7 p.c. Allowing 8 p.c. put aside as savings, 30 p.c. remains for expenditure on other things, including indirect taxes on them. The amount spent for churches, motion pictures, health, etc. is indicated.

The estimated value of Canadian schools and universities is approximately \$600,000,000, a sum equal to about 2 p.c. of our total estimated national wealth. The indebtedness of the schools amounts to more than half their estimated value.

On making a comparison of the cost of education in 1913, the last entirely pre-War year, with that of 1931, an increase of 160 p.c. is noted, \$54,000,000 being spent in the former year on publicly-controlled elementary and secondary schools in contrast to the \$140,000,000 spent in the latter. Since the population increased by only 40 p.c. in the same period, it might appear that education is more expensive now than formerly, but on closer examination, it is seen that such a conclusion, based on a comparison of dollars, is misleading.

Among the factors tending to exaggerate the rise in the cost of education is the changed value of the dollar. The price index in Canada rose from 66 in 1913 (1926=100) to 89.6 in 1931. Thus, in inverse proportion to the lower purchasing value of the dollar, the cost of schooling rose 91 p.c. and not 160 p.c. Still another factor is the failure to take into consideration the increase in enrolment from 1,438,000 to 2,214,000 which lowered the average cost per pupil by 30 p.c. Average daily attendance rose from 942,000 to 1,756,000, which viewed in the light of the other two factors, the "real" value of the dollar and the increase in annual enrolment, shows a net increase in cost of 2 p.c. over an eighteen-year period. The school year was lengthened by 10 days which made schooling in 1931, in terms of the reduced purchasing value of the dollar, even cheaper than it was in 1913. Lastly, in comparing the quantity of schooling given for those two years, we must consider the increased proportion of pupils who are obtaining secondary schooling. It costs twice as much per year to educate a pupil in the high school as in the elementary school. Therefore, education, in terms of "real" dollars, amount of schooling received and type of services rendered, was 10 p.c. cheaper in 1931 than in 1913.

In addition to the pupils getting more instruction per dollar, they are probably getting a better quality of instruction. The teachers' qualifications are much higher. In an examination of the statistics on teachers' professional standing, it is seen that whereas only 17 p.c. of the teachers in 1913 had first class certificates, 38 p.c. were in possession of them in 1931. The proportion of teachers holding second class certificates rose from 50 to 55 p.c., while certificates of the third class or lower were held by only 7 p.c. of the teaching body in contrast to the 33 p.c. in 1913. Of the latter class 9 p.c. had no recognized professional standing in 1913 whereas almost all the teachers had a recognized standing in 1931. This higher standard is not only evident in the certification but also in the higher qualifications required to obtain the same certificates. Higher academic standing, more normal school training and summer school courses have all contributed to improve the teachers' professional equipment. The tendency of teachers to stay in the profession for a longer time, as well as better buildings, equipment and facilities must have tended to improve the quality of education given to the modern younger generation.

Although the pupil was given a better deal for his money in 1931 both in quantity and in quality, it does not mean that it was easier for the taxpayer to support the schools. In terms of the purchasing power of the dollar, school costs went up 91 p.c. in the period. Although there were more gainfully occupied persons to share this burden, it cost the average gainfully occupied person 41 p.c. more in the later year.

Due to the unequal distribution of population and of children, educational costs fall more heavily on the shoulders of the rural population. Violent fluctuations in the prices of primary

products affect the smaller urban and the rural communities more acutely than they do the large urban centres depending on a more diversified economy. The only solution to this problem seems to lie in the creation of a larger unit of school support with the cost equalized over all the communities in the unit, urban and rural, large and small. Although the province would be the most effective unit, two things stand in the way—the hesitancy of the local school boards to yield their autonomy to Provincial Governments and the inability of the provinces to assume the greater financial burden involved. A redistribution of responsibilities or powers of taxation among municipalities, provinces and Dominion may be necessary to solve the latter problem.

THE FAMILY CIRCUMSTANCES OF CANADIAN CHILDREN AND THEIR EFFECT ON EDUCATION

Chapter IV, in attempting to discover the influence of different family circumstances on the dependency of children, has to be confined mainly to statistics of school attendance and illiteracy, as the chief available guide to their circumstances. Children are considered in three main categories: (1) those living with one or both of their own parents; (2) those in families other than their own, *i.e.*, guardianship children; (3) children in institutions.

Children living with both parents form almost 95 p.c. of all children below school age and nearly 90 p.c. of those at school ages. About two-thirds of the remaining children live with either their father or mother.

Children living with their mother only have a slightly better school attendance than children living with both parents, in contrast to which, children living with their father only have a poorer attendance record. While the literacy of children living with their mother only is not as good as that of children residing with both parents, it is nevertheless superior to that of children living with their father only.

Where the parents are both literate, there is a high degree of literacy among their offspring. When only one of the parents is literate, illiteracy is fifteen times as great as when both parents can read and write, but when both parents are illiterate, there is forty times as much illiteracy as in the first case.

Children of immigrant parents, including those who came from Continental Europe, are less illiterate than are native Canadians. Those whose parents are from the British Isles have the best record, with those of United States parentage coming next.

The distribution of guardianship children among the provinces varies, the Maritimes having a higher proportion of children who are not living with their own parents than the other sections of Canada. Among the factors which affect the distribution are the differing rates of illegitimate births, maternal mortality, rural-urban distribution of population and the extent to which orphans can be accommodated in the different provinces. The age distribution reveals that there are more orphans in the higher age brackets than in the lower, a natural occurrence.

Children living with their own parents have a better school attendance record than have guardianship children; there is also less illiteracy to be found among the former group. Relatives give their wards a better schooling than do strangers, while women are better guardians in this respect than men, and older men have a better record than young men who have to care for their younger brothers and sisters.

There is more illiteracy among children of illiterate guardians than among literate ones. Since close to one-tenth of the guardians are illiterate, this tendency is significant. Children with guardians coming from the British Isles have the best record of schooling, while native Canadian guardians are most neglectful in educating their wards.

Children living in institutions such as orphanages, hospitals and shelters are more numerous at school ages than at younger ages. They are fewer in number than those living with foster parents. Quebec has relatively more than the other provinces, possibly because of the existence of a larger number of such institutions in that province.

The special 1931 Census of Institutions shows that there were approximately 35,000 children under the care or supervision of charitable institutions of whom two-thirds were under 15 years of age. Of these 35,000, 19,643 were in residence at these institutions, 7,085 were working for wages and were living in private homes while being under the surveillance of the institutions, 3,479 were quartered in private homes free of charge, while 2,300 had their board in private

homes under supervision of the Children's Aid Societies. The same census disclosed 2,731 under the age of 15 in the mental hospitals of Canada while the reformatories housed almost 1,000 children who were under that age.

Orphanages account for a large proportion of those living in institutions, and there is more detailed information on the schooling of their *protégés*. Some conduct schools while others send the children to the ordinary publicly-controlled schools. A comparison of the age-by-grade records seems to show that orphanage children do not make out as well as other children in their school work. Their average grade falls more and more behind the average for others as they become older, but this is probably because the brighter children tend to be placed in private homes.

YOUTHFUL DEPENDENCY RESULTING FROM DEFECTS, PHYSICAL, MENTAL AND SOCIAL

Chapter V indicates something of the numbers and circumstances of youth who are dependent to an exceptional degree, by reason of defects. Blindness is first considered but it is not often an affliction of the young. There were only 634 people blind under the age of 20 in 1931; among older persons there were 6,679. Less than one-fifth of the blind were gainfully occupied with the average earnings among men being between \$500 and \$600 and those of women between \$300 and \$400. That blindness incapacitates most individuals to the degree that they become entirely dependent is to be seen from the fact that only 37 p.c. of the blind between the ages of 25 and 49 are gainfully occupied. Special schools and special classes have contributed greatly to increase literacy among the blind, as well as to prevent those with poor vision from becoming entirely blind.

Of the 6,767 deaf-mutes recorded in the 1931 Census, 6,000 had suffered from the inability to speak or hear before they had reached the age of 5 while 4,093 had been born deaf and dumb. Almost one-third of the deaf-mutes were in gainful occupations. Not only did the deaf-mutes have a higher percentage of gainfully occupied than the blind in the best earning years but they also earned more. Despite these higher proportions, they were insufficient to make the group as a whole independent.

Schools for the deaf are provided by the Provincial Governments and have a combined enrolment of 1,400 pupils. Special classes for the hard-of-hearing are also contributing to the alleviation of the inconvenience and distress suffered by those handicapped by auditory disabilities.

Although there are no census data on the number suffering from other physical defects, such as loss of the use of limbs and constitutional weaknesses, statistics on special classes in schools and hospitals indicate that they are as numerous as those suffering from defective hearing. In addition to those attending special classes, many, unable to attend these schools, are taking correspondence courses offered by six of the provinces.

Two-thirds of the patients in mental hospitals in 1931 were admitted before they had reached middle life. There are now several institutions for children. Illiteracy is more common among those admitted to the hospitals in their earlier years than among those who have reached maturity prior to admission. This indicates that the causes for incarceration of the younger people are different from those affecting the older people, constitutional defects being a greater factor in the former case, environmental factors in the latter. Almost half of the female inmates are married, but only about one-fourth of the males, a condition which probably has significance in regard to hereditary types of mental cases.

Special classes for mentally defective children are now being conducted in cities from coast to coast, and though they are more expensive per pupil than other classes, it is claimed that the results obtained justify the investment.

Delinquency is to juvenile behaviour what crime is to that of the adult. When leading to incarceration it means dependency. It is more prevalent in urban districts than in rural, with the large city having relatively many more youthful misdemeanours than the town or village. The annual number of convictions for major delinquencies is over 5,000. There has been some increase in proportion to population though not as much as in the case of adult crime. The number under the age of 18 continuously confined to corrective institutions is approximately 2,500, roughly three-fourths boys and one-fourth girls.

CONCLUDING NOTES

The final chapter considers some of the changed relationships of the youth group as a whole to the adult world. It is noted first that in the Dominion as a whole youth has for fifty years constituted a decreasing proportion of the total population. In 1931 there were only 51 persons under the age of 16 for each 100 older, whereas in 1881 there had been 68 per 100. But if we consider the older ages to which young people now remain children, economically speaking, the change in ratio is in the other direction. It is recalled that they were dependent until 18 in 1931, whereas twenty years earlier dependency had ended at 16. Considered in this way, the ratio of children to adults in post-War years has probably been higher than ever before. At the same time that the real ratio of youths to adults increases, so does the ratio of aged adults to those in middle life.

Old age pensions have been a recognition of the increase in dependency at the upper end of life, but there has been no comparable measure directed against the change at the lower end, even though Canadian industry in the last ten years has absorbed only the youth who have come of age in nine years, and in the last twenty years only those who have come of age in eighteen years. The fact that industry for so long has come 10 p.c. short of using the biological supply of youth, should make it clear that the youth situation is not just a depression phenomenon but a deeply-rooted problem.

Among the better-known solutions that have been attempted or recommended, here or in other countries, are compulsory military service, labour camps, forced retirement of older workers, restrictions on immigration and employment of women. It is hardly possible for this study to express preference among such controversial solutions but a lesser known remedial measure can be described.

In Great Britain a special service to youth is conducted through the medium of the employment service. There is a juvenile section in each employment office which works in close co-operation with the schools, advising young people before as well as after leaving school. For juveniles above school age who are without work, there is in each city a "junior instruction centre," quite distinct from the ordinary school system, being under the supervision of the Department of Labour. Effort is not confined to finding jobs, but attempts to find for each young person the position for which he is best fitted. In short, vocational guidance for youth is organized on a national scale. It might be to the advantage of employers as well as young people in Canada, if it received more attention here.

PART I

CHAPTER I

THE LENGTHENING DEPENDENCY OF YOUTH AND SOME OF ITS IMPLICATIONS

Length of Dependency Indicated by Earnings.—The Census of 1931 showed that there were 296,519 young people under the age of 20 working for a stated wage or salary, and that their aggregate earnings of the year preceding June 1 had been \$101,174,000. A further 162,821 were working, but not for a settled wage, as is often the case of young people helping with the parental farm or business. On the assumption that their earnings were equivalent to the earnings of those who were working for a fixed wage, the total earnings of the year for everyone under the age of 20 must have been \$152,727,000.

Since the number of young people at each single year of age—16, 17, 18, or 19—is about the same, the sum of \$152,727,000 may be considered approximately equal to the accumulated earnings of those who were 19 at any date a few years later than 1931, if the rate of earnings remained the same as in the year recorded by the census. In other words, under conditions of 1930-31 the accumulated earnings of 206,000 young people at age 19 would be \$152,727,000; the average boy or girl at this age has earned \$742.

When referring to age 19 we mean all those who are in their twentieth year, their average age being 19 years and 6 months. In order to know the total earnings when the age of 20 is reached, it is necessary to add an appropriate sum for the last 6 months. As the average annual earnings per person at ages 18 and 19 was \$240, and at ages 20-24 was \$399, the earnings of the 6 months in question would be about \$150, and the average total at the end of the 'teens would accordingly be \$892.

How many years of self-support will \$892 provide? It allows \$37 per month for two years. If young people are independent on \$37 monthly, then their dependency as a group ends with their eighteenth year. Any young person who has tried to get along in recent years on less than \$40 a month away from home will doubtless feel that it is a precarious independence, but the majority are still at home, and their \$37 monthly is probably sufficient to keep them from being a drain on the family purse.

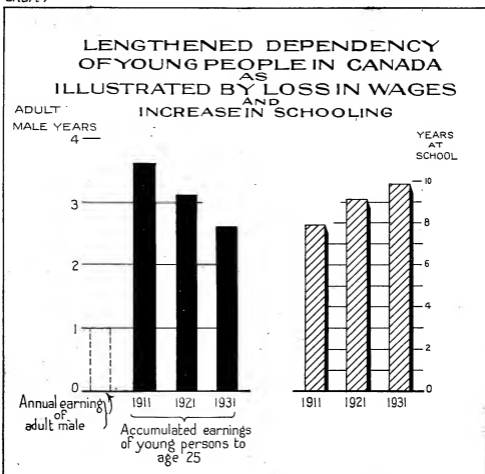
Now contrast this with the record of 1921, when the 279,374 young people under 20 whose wages were recorded earned \$138,817,000. If all of the other 140,450 who were gainfully occupied were earning at the same rate, the total earnings of the year for the young people must have been \$211,966,000. Taking another view of this sum, as we have done with the corresponding amount for 1931, it may be considered the accumulated earnings of about 156,000 young people at age 19, under conditions of 1921. The average young person at age 19 under these conditions had earned \$1,360. In another 6 months, i.e., by the time they had come to the end of their 'teens, they had probably averaged another \$200 apiece, or \$1,560 in all—a sum that is not far short of being double what young people of the same age a decade later had earned.

It is to be remembered, of course, that the cost of living was higher in 1921, that higher earnings were required to pay for a month's self-support. But it is also on record that the average yearly wage for workers at all ages was not very much higher in 1921 than in 1931. In the earlier year it was \$1,057 for men and \$573 for women; in the later year it was \$927 and \$559 respectively. Adult males working for wage or salary in 1921 averaged \$1,124 each, as compared with \$984 in 1931. Thus the earnings of the average young person, boy and girl, on reaching his twentieth birthday in 1921 were equal to the income of a man for 1.4 years, whereas in 1931 they were the equivalent of less than a year (0.9) of adult male earnings.

This ratio of 1.4 to 0.9 is probably as good an index as can be obtained of the decreased independence of the older boys and girls in the decade. To carry it further back and show the relationship with pre-War years, it is unfortunately necessary to compare all the young people up to the age of 24, because the Census of 1911 compiled the earnings of all these in one group. Such a comparison does not show the full extent of the reduced self-support of those under 20, but their circumstances have altered sufficiently to affect the records of the larger group noticeably, and the trend between 1921 and 1931 is seen to be a continuation of the tendency in 1911-21.

Calculating in the same way as for the smaller group, it appears that on the average, each person, male and female, at the age of 24 in 1931 had earned the equivalent of only 2.6 years of adult men's wages, and persons at the same age in 1921 had received 3.1 years of men's earnings, whereas in 1911 they had earned the equivalent of 3.6 years. With this relationship existing between the different years in respect of persons at the age of 24 we can be reasonably certain that on reaching age 20 under conditions of 1911 the average boy or girl had earned about two years of adult men's pay, while as we have seen, conditions of 1931 allowed them less than one. The young people of to-day have probably less than half the economic independence in their 'teens that the pre-War generation had. If we call it two years of self-support in 1931 they must have had at least four years in 1911.

Chart I

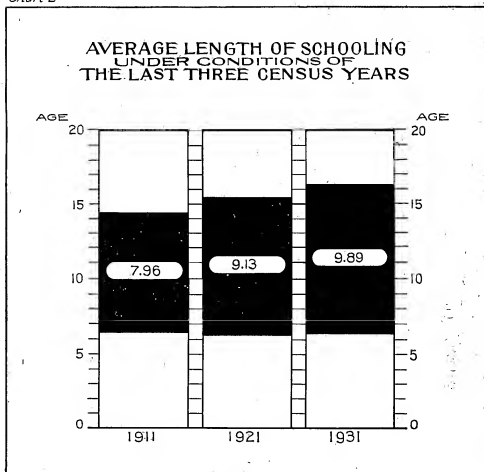


The Evidence of School Attendance Records.—Census records of school attendance confirm the estimate of lengthened dependency made from a study of earnings. Each decennial census ascertains the number of children who have attended school during the preceding school year, and the number of months attended by each. From this information it is possible to calculate the amount of schooling being received per child.* If 10 months of attendance are considered a full year of schooling, the child of 1911 may be said to have attended school 6.58 years, the child of 1921 about 7.58 years, and the child of 1931 about 8.55 years.

* For the details of this calculation see 1931 Census Monograph *Illiteracy and School Attendance* by M. C. MacLenn.

The average time spent in school has increased at the rate of 1 month per year since 1911, i.e., 20 months or 2 years of attendance per child in twenty years. And lest it be thought that the increase is due to improved regularity of attendance rather than a longer school career, it ought to be mentioned that the average number of years during which each child spent some time in school (in other words, the time he was enrolled) increased from 7.96 in 1911 to 9.13 in 1921, and to 9.89 in 1931 (see Chart 2). In measuring the length of schooling this way the increase still appears to have been about 2 years in the twenty-year interval, and in 1931 the total time of a child in school averaged very nearly 10 years throughout the country. Comparing this with the somewhat more than 2 years of added dependency to which the record of earnings pointed, it would seem that all but a relatively small fraction of the longer period of "economic minority" was being spent in school. We can say that the increase in school attendance was almost exactly 2 years, the increase in dependency probably a little more.

Chart 2



The length of school attendance may be described in terms of the children's age as follows: in 1911 the average age on starting to school was 6.42 years, and adding to this the 7.96 years in school, the age on leaving must have been 14.38; in 1921 they started at age 6.33, stayed 9.13 years, and left at age 15.46; in 1931 the starting age averaged 6.36, the time in school 9.89 years and the age of leaving, 16.25.

Using as a clue the age of leaving school, it is possible to form a connection between 1931 and the years since. In inter-censal years, the provincial records of school enrolment by ages, provide practically the only statistical indication of what is happening to young people in the way of finding employment. Unfortunately there is only a record for six provinces, the Maritime and Prairie Provinces, that permit of this use, but a statement is presented below to show the tendency since 1931 in the matter of the older children of these six remaining in school.

I.—COMPARISON OF THE PROPORTIONS OF OLDER CHILDREN (15-18) IN SCHOOL, BY SINGLE YEARS OF AGE, MARITIME AND PRAIRIE PROVINCES, 1931, 1933 AND 1935

Item	P.C. of Children Enrolled in School at Age			
	15	16	17	18
Maritime Provinces—				
1931.....	71.1	47.4	25.4	10.5
1933.....	71.6	51.3	32.7	16.3
1935.....	73.9	47.8	31.3	15.8
Prairie Provinces—				
1931.....	73.1	44.7	26.3	12.6
1933.....	74.9	49.2	32.3	17.5
1935.....	73.4	45.7	30.8	17.4

In both areas the proportion of children in school at the ages 15-18 was higher in 1935 than in 1931, though not as high as in 1933. The two years following 1931 were those in which the chances of young people finding jobs were smallest, and they remained in school in unusual numbers. Since 1933 the proportions have fallen back nearer the level of 1931, but at the ages of 17 and 18 they are still considerably higher, and it seems likely that the long-term tendency of the current decade will be a continuation of the trend in 1911-31. If so, the average age for leaving school in 1941 will be about 17 years, in place of the 16.25 years of 1931.

In 1931 there was as we have seen a difference of 1.75 years between the age of leaving school and the age of self-support (considering \$37 per month as self-support). This would be due to some not working for pay at all and others working for less than enough to keep them. If there is the same gap between school and independence in 1941, the younger generation as a whole will probably not be self-supporting until the age of 19 or thereabouts.

The Independence of Boys and Girls Compared.—The full significance of the lengthening dependence of youth as a group is not apparent until it is realized that the loss has been entirely among the boys or young men; they have stood more than the net loss of young people as a group, for the girls have gained in the interval at their expense. It has been recorded above that accumulated earnings per person at age 24 were the equivalent of only 2.6 years of adult men's pay in 1931, where they had been the equivalent of 3.1 years in 1921, and 3.6 years in 1911. This meant a twenty-year loss of 28 p.c. for young men and women together, but the combined figures include a gain for the girls from an average of 1.1 years of adult men's earnings in 1911 to 1.2 years in 1921, and to 1.5 years in 1931. Meanwhile the boys' earnings, measured in the same way, had dropped from 5.7 in 1911 to 5.1 in 1921, and to 3.7 in 1931; the twenty-year loss was 35 p.c., that of the later ten years alone being 27.5 p.c.

Alongside of this fact it is of interest to note that the percentage of young men marrying under the age of 25 was reduced in similar proportion. Among those in the age group 20-24 in 1921 there were 179 per 1,000 married, in 1931 only 142—a decrease of more than 20 p.c. (The corresponding decrease in the number of girls per 1,000 married at the same age was considerably less, only 13.6 p.c., for the reason that they tended to marry older men.) This general postponement of marriage in the decade has been accentuated in the years since 1931. The number of young men marrying under the age of 25 has been considerably lower each year since 1931 than the annual average of the five-year period preceding the census, although the population at this age has increased. The whole trend to later marriages gives rise to many problems,

among them the effect on the health and morale of the young people, about which there is little recorded in statistics. Illegitimate births, however, are recorded, and as there can be little doubt of a causal connection between their increase and the growing frequency of marriage postponement, it is worth recording that in the eight provinces (Quebec excepted) for which statistics have been compiled since 1921 the proportion of illegitimate births has doubled in the period; one birth in fifty was to an unmarried mother in 1921, one in every twenty-five in the latest three years recorded (1932-34).

This mention of the problem of delayed marriages, in connection with the discussion of changing length of dependency as between boys and girls, should not, of course, be construed to mean that the later marriages are all, or even mostly, due to girls having taken the place of boys in gainful occupations. The girls have received probably much more blame than is their due in this respect, for the matter of their taking jobs in place of boys of their own age has not been the boys' greatest difficulty, as is evident from the comparison that has been made. If the gain in girls (under age 25) in the period 1921-31 had all been made by the boys of their own age instead, the latter would still have lost 21.5 p.c. as compared with their actual loss of 27.5 p.c.; and if the girls' gain over the twenty-year period had all gone to the boys the latter would still have lost 28 p.c., whereas their actual loss of 35 p.c. was little more. Thus if the boys' loss of independence in recent years is due in any considerable measure to female employment, the females chiefly responsible must be those older than the boys—those who secured jobs before the boys were old enough to work and have not relinquished them.

The extent to which this has happened is indicated by the fact that the increase in earnings in the period 1911-31 was twice as great among women over the age of 25 as among those younger; and in the latter ten years considered alone it was nearly five times as great. So it is probable that they held from the boys two to five times as much remuneration as did the younger girls. Those girls who were old enough to start working during or shortly after the War years were particularly fortunate and are still benefiting from the advantage which that start gave them. These were the girls, for instance, who were of ages 15-24 in 1921 and who at that time were earning \$524 annually as compared with \$455 for girls of the same age in 1931; they were fortunate too in the later year as compared with women who were working at their age a decade earlier, for they received \$700 apiece in 1931 where women of the same age in 1921, when living costs were higher, had made only \$668.

Since, as is beginning to appear from the above, the financial handicap of present-day young men, and their consequent inability to marry, is essentially a matter of older *vs.* younger, there should be some prospect of relief in the expedient of encouraging girls to marry and remain in employment, for it is the young people now of most common marrying ages who are at the greatest disadvantage. Their resources combined with the boys' in establishing homes would make it easier in some cases, but it should be noted that it would not solve the problem for more than a minority, because the joint means of the younger people of both sexes is much below what it was. It has also to be considered what the effect of such a policy would be on the group still younger who have yet to come on the labour market, for it could probably be more easily adopted than discarded.

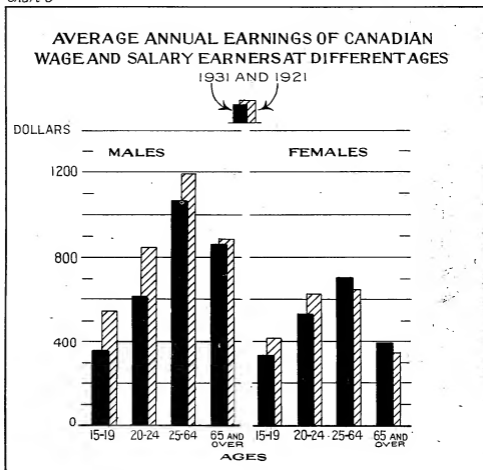
The Earnings of Younger *vs.* Older.—The favourable position of girls who came of working age around 1920 as compared with those who came of age around 1930, extends also to young men of the two dates. Young men employed at ages 20-24 in 1921 had an average year's earnings of \$846, where those of the same age in 1931 received only \$613. This meant that there had been double the reduction in pay for these ages than the general drop in wages and salaries for older men would warrant. Part of the difference was doubtless due to the young men at the more recent date having worked a shorter time and being less experienced, and although this may have been fair enough from the employer's standpoint it could not alter the fact of their reduced circumstances.

The general change between 1921 and 1931 as affecting persons of both sexes in the matter of earnings of younger and older persons is summarized in Statement II and Chart 3.

II.—PROPORTIONS OF DIFFERENT AGE GROUPS OCCUPIED AND THEIR AVERAGE EARNINGS,
BY SEX, CANADA, 1931 AND 1921

Age Group	P.C. of Total at Age Who Were Gainfully Occupied		Average Annual Earnings of Those Working for Wages or Salary	
	1931	1921	1931	1921
			\$	\$
Both sexes—				
All ages.....	37.8	36.1	848	954
15 and over.....	55.3	55.0	855	959
Male—				
15-19.....	59.1	69.1	351	546
20-24.....	92.5	92.4	613	840
25-64.....	96.5	95.0	1,067	1,191
65 and over.....	55.7	58.5	861	881
Female—				
15-19.....	25.5	28.1	327	418
20-24.....	42.4	35.1	533	622
25-64.....	15.3	15.6	703	650
65 and over.....	6.2	6.2	393	340

Chart 3



Looking first at the male workers and comparing the changes in the smaller groups with those for the ages 25-64 (which include over 70 p.c. of the total) it is to be seen that younger and older both lost in the percentage of their number gainfully occupied, and the younger groups in addition lost heavily in their rate of pay. Identical relationships exist in the case of female workers, except that those of age 20-24 secured their share of the increase in numbers gainfully occupied.

In the first two lines of the statement, for both sexes and all ages, it is to be seen that a higher proportion of the population was gainfully occupied in 1931 than in 1921, and although there was more unemployment in the later year, average earnings *per capita* of those working for wages and salary were only between 11 p.c. and 12 p.c. lower. The cost of living, as measured by the Dominion Bureau of Statistics' index, in the same interval dropped about 18 p.c., so it seems reasonable to suppose that the part of the population dependent on wages and salary were better off in 1930-31 than in 1920-21. The comparatively rapid fluctuations, both in cost of living and earnings, at both ends of the decade, suggest that too much stress should not be placed on an exact comparison between two dates, but there seems little doubt about the reality of the general tendency indicated by the measurement, *i.e.*, that the purchasing power or real earnings of the population as a whole are increasing but that this is being achieved through higher earnings for a shorter working life. Old persons and young persons, generally speaking, receive their share of the improvement only as a sort of alms from those in the shorter prime of working life.

New Means of Money-Making Are Mainly Jobs for Salary or Wage.—Most of this discussion of "younger *vs.* older" applies especially to the section of the population working for wages or salary. They tend to become an increasingly larger proportion of the total gainfully occupied, and a knowledge of the trend in this respect is essential to an understanding of the difficulties with which young men are having to contend. In summary it is this: in 1911 less than 60 p.c. of money-making occupations were jobs for salary or wage, but nearly 80 p.c. of the new positions that have been created since then are of this kind. Only about one in five of the new positions in twenty years has been that of an independent worker such as farmer, professional man, merchant, tradesman, other employer or person working on his own account. Four out of five of the new positions have been jobs on somebody's payroll. In the latter half of the twenty-year period, the post-War years, there has not been one "independent" position in five new ones.

This, of course, has been a consequence of the development of large-scale enterprise, and here has been another phase of the competition between younger and older men. The trend to "big business" in production and distribution of goods has made it increasingly difficult for young men to establish themselves independently, the difficulties in some cases extending to competition of an unscrupulous nature, such as price-cutting on the part of a business of national proportions in an area where a dangerous young competitor appears. When, thwarted in such ways, or simply by the economic advantages that large-scale production permits, the young men have sought employment with the established concerns, they have still been at the mercy of the employers' choice between themselves and girls for office jobs; and between themselves and more mature immigrant men for jobs involving heavier work. Both girls and immigrants, for obvious reasons, have often under-bid the boys and in this way have received preference from employers. As many as 82.3 p.c. of gainfully occupied women and girls are working for salary or wage, and in spite of immigration's share in settling the land, there is a considerably higher proportion of the gainfully occupied immigrant men in wage-earning jobs than is the case with native-born Canadian men—69.1 p.c. as compared with 58.2 p.c. in 1931.

The result of the three-sided competition is indicated in Statement III which shows that with few exceptions the industries in which the highest proportion of workers are wage-earners are those in which women or immigrant men hold more than their share of the jobs, *i.e.*, more than their average in all industries. In agriculture, the industry where four-fifths of those engaged are independent workers, and in forestry, fishing and trapping where the proportion of non-wage-earners is also high, the Canadian-born men have their highest proportions.

III.—PROPORTIONS OF CANADIAN-BORN AND IMMIGRANT MALES IN DIFFERENT INDUSTRY GROUPS, CANADA, 1931

Industry Group	No. Gainfully Occupied	P.C. of Gainfully Occupied			
		Wage-Earners	Canadian-Born Males	Male Immigrants	Females
All industries.....	3,924,533	65	54	29	17
Agriculture.....	1,127,767	18	69	29	2
Forestry, Fishing, and Trapping.....	97,502	59	75	25	-
Mining.....	72,011	95	47	53	-
Manufacturing.....	631,201	96	50	33	17
Construction.....	255,091	85	61	39	-
Transportation and Communication.....	305,209	92	59	34	7
Retail Trade.....	325,427	70	51	26	23
Wholesale Trade.....	90,996	85	56	29	15
Finance, Insurance.....	92,340	89	53	20	27
Professional Service.....	243,744	68	27	13	60
Public Administration.....	115,816	100	54	32	14
Custom and Repair.....	81,698	52	41	36	23
Personal Service.....	302,456	79	15	17	68

All four columns of percentages are percentages of the total number gainfully occupied. The last three columns together add to 100 p.c. for each industry.

Unemployed and Idle Youth in 1936.—With this glimpse into trends and causes it will be of interest to formulate a conception of the extent of the idleness and unemployment problem among Canadian boys and young men of the ages 15-24 at a date more recent than the Census of 1931. The figures in Statement IV are not to be construed as official estimates, but in the absence of such they represent an attempt to ascertain something of the general proportions that such a set of figures would show if they were available. The numbers in the groups under which youth are classified are all in some measure estimated. The basis of the estimates is the Census of 1931, the most recent source of information of this kind, but they are guided also by the records of school attendance and employment in the years since. Some explanation of the grouping will make for a better understanding.

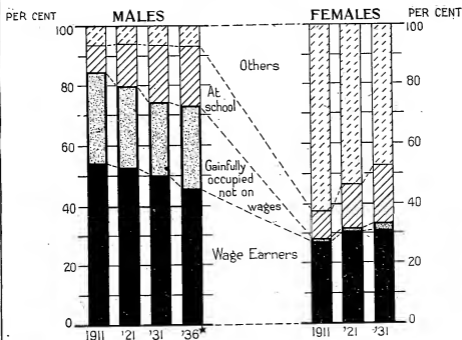
The first line shows the number of males who would be expected to be alive in Canada at ages 15-24 in June, 1936. The figures are those of the group five years younger in 1931 with the calculated deaths deducted. The remaining lines add to make this total. (A) *At school*.—The two lines under this general heading include all those who attended school for any part of the year. Some did not attend the entire year; but the regularity of attendance is high at these ages. (B) *Non-farm employees*.—The two lines under this general heading added together are intended to show the number who were "employed" in occupations other than agriculture. Nearly all are wage- or salary-earners, though there are a few (as in the case of farmers' sons) helping with their parents' business, or for other reasons not receiving a fixed wage. "Employed" here carries the significance of being an employee; it does not mean just that they were "engaged" in non-farm industries. There were others in these industries who were not employees; these are included in D. (C) *Farm workers*.—These include all who were engaged in agriculture except about 17,000 who owned or rented farms. (The farm owners or renters are included in D.) About 76 p.c. of those under the age of 20 in this category in 1931 and 63 p.c. of those at ages 20-24 were not receiving a fixed wage. These percentages are probably higher now. (D) *Working on own account*.—This heading is self-explanatory. These might be called the independent workers—those farming, in business for themselves or practising a trade or profession independently. (E) *Neither at school nor gainfully occupied*.—B, C and D together make up the total gainfully occupied and A includes all who were at school. E includes the left-overs, nearly all of whom are in urban communities, for farm boys who are not at school are practically all included in C, helping on the home farm.

IV.—HOW CANADIAN YOUTH (MALES ONLY) AGES 15-24 WERE PROBABLY OCCUPIED IN THE YEAR ENDED JUNE 1, 1936

Item	Age Group			
	15	16-17	18-19	20-24
Approximate number, June 1, 1936.....	110,726	215,180	205,541	516,849
A. At school—				
(1) Number who would be at school under conditions of 1931.....	75,652	75,183	25,844	18,624
(2) Approximate additional number at school.....	5,626	12,263	4,353	1,363
B. Non-farm employees—				
(1) Probable number working on average day.....	3,094	27,012	57,928	202,622
(2) Probable number idle on average day.....	928	9,671	22,002	69,044
C. Farm workers, including farmers' sons without wage as well as wage-earners.....	21,533	65,996	72,249	182,148
D. Working on own account, owners and employers.....	334	3,228	7,715	49,290
E. Neither at school nor gainfully occupied during year.....	9,559	21,827	15,390	23,758

Chart 4

HOW THE YOUNG MEN AND WOMEN OF CANADA AGE 15-24 WERE OCCUPIED DURING THE YEARS OF THE LAST THREE CENSUSES INCLUDING CALCULATION FOR MALES IN 1936



* Estimated

The calculation as presented does not offer any single line which can be pointed to as the number unemployed. Such a figure, without consideration of its constituent elements, has little meaning or value. There are those at school who would be working if they could find jobs, those at home on the farm who are potential applicants for wage-earning places, those who are

trying to conduct a business of their own who are ready to sell out in order to take a place on somebody's payroll, those who have quit school for a year or more without finding any occupation (some of them unemployable by reason of physical or mental disability), besides those who are unemployed in the narrower sense of having worked for wages or salary only a part of the year. The calculation distinguishes between these different types of idleness and tries to give some conception of the numbers involved in each. It makes no pretension to a high degree of accuracy but the general proportions are probably not misleading.

The final line, E, is probably conservative. The percentage of total youth shown in it differs very little from the proportion discovered in the Census of 1931, and, surprising as it may be to most people, it was not much higher in 1931 than in 1921. Under post-War industrial conditions, it seems that a number equal to two-thirds of each year's "crop" of young men are continuously without occupation. This loss is in addition to that which results from working only a few weeks or months in a year.

Unemployment, in the sense of working for wages or salary part of the year and being off work the rest of the time, is shown for industries other than farming, under B. There are about 100,000 shown in this category, between 85,000 and 90,000 of whom were off work by reason of having no job, the rest on account of temporary lay-off, sickness, accident and other causes. Adding these to the 70,000 idle all year by reason of having no job at any time during the year, the total is at least 155,000 or nearly one and a half times the annual supply of new workers coming of age. Considering that this is practically all among the non-farm population it means two years of idleness on the average for all non-farm boys. Half of this at least seems to have become a normal phenomenon of modern social and economic organization.

There is a certain amount of unemployment of the urban variety among agricultural workers, i.e., among the 30 p.c. of those in category C, who are working for wages. In 1931 their unemployment was the equivalent of one-seventh of them being idle all the time, though it would probably be more like one-quarter of them idle through the winter, at which time most of them would likely become town residents. In this way the estimated 155,000 non-farm youths idle that winter would probably be increased by about 25,000. Among the non-farm wage-earners too, there is, of course, more unemployment in the winter than in the summer months; so while the statement expresses unemployment in this group as the number idle on the average of June, 1935-June, 1936, they would be more numerous than 85,000 in the winter months. The seasonal factor would probably make the total number of idle youths not living on farms during the winter something like 200,000 or more.

Besides these we must not overlook those keeping busy on the home farm or at school without making money. About 70 p.c. of farm workers, it will be recalled, are not receiving wages. Both groups are keeping occupied though those at school are almost all idle so far as gainful occupation is concerned, and the same is no doubt true of many farmers' sons. Both groups have to be considered in the unemployment picture, in the sense of being possible applicants for any new jobs that become available. The same is true of many in category D—those working on their own account. As a preceding page showed, there has for years been a tendency away from independent work to wage-earning.

CHAPTER II

THE COST OF REARING A CANADIAN CHILD TO THE AGE OF INDEPENDENCE

Having ascertained in Chapter I the length of the average child's dependency under conditions of 1931, it will be possible now to attempt an estimate of the cost of supporting the child during these 18 years. There does not seem to have been any previous estimate of this kind attempted for Canadian conditions, and the data with which to do it are none too plentiful, so a high degree of accuracy in the total figure is not to be expected. Yet some conception of its general proportions and of the relative importance of the different elements which go to make up the total is possible. Both of these will vary somewhat from year to year, but data for the year of the 1931 Census have the advantage of avoiding the extremes of prosperity and depression.

Cost of Food.—Probably the most convenient way of calculating the cost of food that a child consumes in 18 years, will be by using the family budget compiled by the Department of Labour and Dominion Bureau of Statistics.* Here it will be found that a family budget of staple foods, in the year preceding the date of 1931 Census, cost about \$505. Allowing 5 members to this family, 2 adults and 3 children, we can find what the annual consumption of a child is worth, providing we know what proportion the value of a child's diet bears to that of an adult's. There have been some careful calculations of these ratios made for the United States, and there is no apparent reason why they should not be applicable to Canada.

A bulletin of the United States Bureau of Labor Statistics†, based on an investigation of over 12,000 families, shows the values of food consumption for different ages to compare as follows:

Adult male.....	\$1.00
Adult female.....	.90
Child 11-14 years.....	.90
Child 7-10 years.....	.75
Child 4-6 years.....	.40
Child 3 years or under.....	.15

Using these ratios and the ages of children under 18 as shown by the Census of 1931, it can be found that the family of 5, when eating \$505-worth of food is consuming the equivalent of 3.8 adult male units. Thus one adult male unit is worth \$134, and since 11.25 units are required to feed the child to the age of 18, the cost of his food for 18 years, on the basis of 1930-31 prices, is \$1,508.

Dr. Graham Lusk, in his book *The Fundamental Basis of Nutrition*‡, gives a somewhat different table of ratios for consumption of children at varying ages, on the basis of which the Canadian child in 18 years would consume 12.68 adult male units, worth \$126 each, or a total of \$1,598. For our purposes it can not be far from the truth to take a figure half way between these two, say \$1,550.

Cost of Clothing.—The budget in *Prices and Price Indexes 1913-1931*, used for the calculation of food costs, does not contain a record of clothing costs. The study of budgets of civil servants' families in the same report, however, shows for the year an average expenditure on clothing amounting to \$52.24 for the first child and \$35.33 for the second child, in 4-person families. If the \$52.24 could be taken as an average for the older children, and the \$35.33 for the younger children, the expenditure in 18 years would be \$788.

**Prices and Price Indexes 1913-1931*, p. 132.

†*Cost of Living in the United States*, p. 70. Government Printing Office, Washington, 1924.

‡Yale University Press, Second Edition, 1923, p. 48.

For the purpose of measuring the change in the cost of living in working men's families in Canada, the Department of Labour prepares an index*, in which clothing is given a weight of 18.5 p.c. as compared with a weight of 35 p.c. for food. If this ratio were used in the case of children alone, in conjunction with the figure of \$1,550 for food, the cost of clothing in 18 years would be \$820.

On the basis of this, and other evidence that might be set down, it seems safe to say that, on the basis of 1930-31 prices, the cost of clothing for the 18 years of dependence would be in the neighbourhood of \$800.

Cost of Shelter.—The expenditure on rent, fuel and light shown in the family budget in *Prices and Price Indexes 1913-1931*, for the year preceding the date of the census, is almost identical with the amount allowed for food—\$503 as compared with \$505. On this basis, the cost of these items to the family would be \$9,054 in 18 years.

What proportion of this cost should be charged to each child is difficult to decide. When one looks for guidance to a census table which shows the amount of rent paid by families of different sizes, he sees that families without children pay the highest rents, and that the more children there are in a family the lower is the rent. But it does not follow that children are an asset offsetting the cost of rent or that no rent is chargeable to them. Perhaps a reasonable, if arbitrary, way of calculating the rent, light and heat costs chargeable to a child is to allocate to it one-sixth† of the amount paid in 18 years by the family of 5. This would amount to \$1,509.

Under the heading of shelter an entry should also be made for the cost of furniture and household equipment used by the child. The study of civil servants' budgets, to which reference has already been made, shows the year's expenditure under this heading for a 4-person family to be \$78. In 18 years this would total up to \$1,404, and be mainly replacement costs. One-sixth of this charged to each child, which is probably a very conservative proportion, would be \$234. It might also be permissible to charge the child with a part of the cost of equipping the home when the parents first started to keep house, but against this there is the consideration that, if the child is charged with his share of replacement costs, the home is left equipped when he reaches the age of independence.

In addition to the cost of rent, fuel, light and furniture there are such items as laundry and cleaning supplies, domestic service, telephone, toiletries, etc., to be considered in connection with the housing of a child. Calculated in the same way as furniture costs, these amount to \$300 at least, per child, in 18 years.

Putting all of these items together, we have a total of \$2,043 in connection with housing or shelter during the period of the child's dependence.

Health, Recreational and Social Costs.—Using the expenditures of civil servants as the only available guide, the 4-person family spends \$60 per year on medicine, hospital bills, doctors' and dentists' fees. A full fourth of this, it seems, should be charged to each child, as health expenditures for juveniles average quite as high as for the parents.‡ In 18 years this would mean \$270. It is not unlikely that a further sum could fairly be added to this to cover medical and related charges at the time of the child's birth. In the families averaging \$60 per year, it is not stated what proportion of confinement cases are included.

Recreation charges include toys, sporting goods, vacations, frequently automobile buying and operating costs, theatres and other amusements. One-sixth of this charged to the child makes an accumulation of \$255 in 18 years. Dues for insurance, junior organizations, church, etc. would easily raise this to \$300, judging by the evidence available, making a total under this general heading of health, recreational and social expenditures, of something like \$600.

The Cost of a Child's Schooling.—In the seven Canadian provinces (British Columbia and Quebec excepted) for which a record of the ages and school grades of children is available,

*Published in the monthly *Labour Gazette*.

†This is the proportion adopted in the book *The Money Value of a Man* by Louis I. Dublin, Ph.D. and Alfred J. Lotka, D.Sc. The Ronald Press Company, New York, 1930. See p. 32.

‡Cornell University Agricultural Experiment Station Bulletin No. 423 by E. L. Kirkpatrick.

it can be shown that the average child completes more than 8 years, or grades, of school work.* Two-thirds of all children go as far as the final year of the elementary school, about half do some high school work, one-fifth or more reach the final or matriculation year, more than one-tenth continue to a professional school or university, and about three per hundred get as far as a university degree. Although the number of girls and boys at the outset is about equal, girls in school are considerably more numerous than boys from the fifth or sixth grade right up to normal school or university entrance, when the proportions are reversed. Consequently, the average girl when leaving school is about half a year's work in advance of the average boy.

Knowing thus the extent of the average child's schooling, it is comparatively easy to show the cost. The cost of providing a year's school training varies according to the degree of advancement of the child, but sufficient statistical data exist to make an approximate calculation of the cost of a year in elementary grades, secondary grades and university years respectively. The current cost of operating the Ontario elementary schools (average over the last five years, on the basis of average daily attendance) has been \$66 per pupil per annum, as compared with \$137 in the secondary schools. A similar calculation for Manitoba† shows a five-year average cost of \$59 for elementary pupils, and \$108 for secondary, on the basis of the total year's enrolment. Saskatchewan secondary schools in the last five years show an expenditure of \$119 per pupil of the yearly enrolment, while the corresponding elementary schools show \$59. The correspondence between the Saskatchewan and Manitoba costs is thus very close, and if they were based on average daily attendance as the Ontario figures are, or *vice versa*, the three would differ very little. Apart from these three provinces there are no complete records published except for a few cities. Because of the similarity in the provinces examined, and the observable tendency for school costs to be much the same in Alberta and British Columbia and somewhat lower in the provinces east of Ontario, it must be very near the facts to say that the cost per pupil in average daily attendance in the elementary grades is \$60-\$70, in the secondary grades \$120-\$140.

Attention is drawn to the cost per pupil in average daily attendance rather than per pupil who attended school at any time during the year, for it is the former number rather than the latter who complete a full grade or year of work in a school year. And it is the cost of completing a year's work that we need to decide, for we know, from the opening paragraph above, the number of years' work that a child completes.

Without taking account of board, lodging and other personal expenses, the annual cost of a student to a Canadian university is shown, in the *Annual Survey of Education in Canada 1930*, to be between \$500 and \$600. In view of the many activities of universities in addition to the instruction of regular students, it is probably not necessary to add anything to this sum to obtain a fair figure per student completing a year's work in an academic year. If we use the figure \$550, the cost of a university year is about four times the cost of a secondary year, which in turn is roughly double the cost of an elementary year.

On this basis the cost of a formal education that lasts until university graduation is about \$3,200—i.e., the cost to the school and university only, and not including the student's ordinary cost of living at any time. On the same basis, the cost to the community of a schooling that ends with a complete high school training is about \$1,050, and the cost of a full elementary schooling is roughly \$500.

Using the table of school survival in the *Annual Survey of Education in Canada 1930*, to which reference was made above, the entire expenditure on schools and universities is found to be \$690 per child. To obtain the complete cost, something should be added to this to include the education costs met directly by the parents, such as books and other school equipment, and any private tuition that the child receives. Such a figure has to be chosen more or less arbitrarily, but \$50 or \$60 would probably be a sufficient allowance‡, and it could be said accordingly that the cost of the Canadian child's schooling, in round numbers, is \$750.

**Annual Survey of Education in Canada 1930*, pp. xiii, xxvi, published in 1932 by the Dominion Bureau of Statistics. The present summary is from the table shown there at length, and based on school records of the preceding half dozen years. See also the companion study to the present, *Illiteracy and School Attendance*, where a calculation from the census, as entirely independent source, is shown to indicate the same length of schooling.

†*The Manitoba Teacher*, Dec. 1932. An address delivered over the radio, entitled *High School Costs—Some Comparisons* by Andrew Moore, Inspector of Secondary Schools for Manitoba.

‡The average annual expenditure of the group of civil servants' families on books and the education of their children is about \$7 per child.

Summary of Costs.—The only major item that has not now been considered in connection with rearing a child is the value of the parents' services and sacrifices, especially the mother's. While it is not in any sense intended to overlook those, they must be passed over with the barest mention as they do not permit measurement in dollars, for comparison with the other costs. Bringing together the costs under the several headings we have the following summary for the average Canadian child during its 18 years of dependence, on the basis of economic conditions in 1930-31.

Food.....	\$1,550
Clothing.....	800
Housing and related costs.....	2,050
Health, recreation and social costs.....	600
Schooling.....	750
Total.....	\$5,750

Since the greater part of the cost of schools is met out of property taxes, which in turn are in part covered by the rent charged against the child, it might be contended that there is some duplication between the costs shown for education and for shelter, but all of the estimates have probably been made on a basis conservative enough to make allowance for any duplication of this nature.*

It is of particular interest to notice the comparative sums spent under the headings that represent primary physical necessities—food, clothing and shelter—and the others, of which the chief is schooling. Figures quoted in the footnote indicate that in the United States as well as Canada barely 13 p.c. of the total is spent on formal school training. In other words, it costs no more to raise 6 children and give them an average schooling than to raise 7 completely illiterate. More is spent on clothing a child than on sending it to school, twice as much is spent on nourishing it, and nearly three times as much on housing. From a purely economic standpoint the figures seem to suggest that schooling at its present level is a good investment, for there can be little doubt about 6 children with average schooling giving promise of greater economic return than 7 who have never been to school.

Paying the Cost of Rearing a Child.—In so far as our calculations thus far are reliable, the young person at 18 may be considered as capital goods to the value of \$5,750. An interesting calculation† made by Mr. M. C. MacLean, makes it possible to see something of the time and the manner in which this investment is returned by the youth to society. The average boy reaches the age of 27 before his aggregate earnings amount to this sum, but at 27 he is supporting a wife as well as himself. At the age of 31, providing his wife is of the same age, their combined life earnings equal the amount spent in raising them to the age of 18, without allowing for interest on it during the thirteen years. In a sense they avoid interest charges, for their repayment to society

*Dr. Dublin and Dr. Lotka, in the book mentioned in a previous footnote, give the following comparable figures for the United States a few years earlier. Prices at that time were higher than in the years to which the Canadian figures apply.

Cost of being born.....	\$ 250
Food.....	2,755
Clothing and shelter.....	3,333
Education, paid directly by family.....	50
Health.....	283
Recreation.....	130
Insurance.....	54
Sundries.....	570
Total paid by family.....	\$ 7,425
Education costs paid by community.....	\$ 1,100

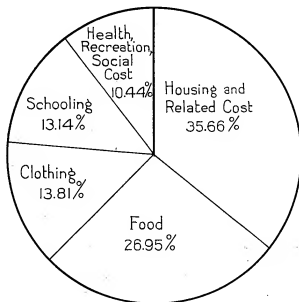
†Published under the title *Memorandum re the Earning Power of Canadian Male and Female Workers, by Ages*. Based on data collected at the Census of 1931 and from the Annual Reports on Vital Statistics, Dominion Bureau of Statistics.

is in the form of replacement, reproduction of themselves at a later date. At the age of 31 they have 1 child, and in his early forties the average man is supporting 2 children or more, as well as his wife.

The life-time earnings of men living to the age of 60 under conditions of 1931 would be about \$40,000; of women, about \$4,000. At the age of 70 the men's earnings total nearly \$50,000, but the women's are little higher.

Chart 5

COST OF REARING A CHILD IN CANADA



The average year's pay of all men on salary or wage in 1930-31 was \$927. This entire sum for six years would be required to meet the cost we have calculated for raising 1 child. The average earnings during the years that children are usually supported are, of course, higher than over the whole span of years.

Regional Differences in the Weight of Child Support.—There are very considerable differences between different parts of Canada in the proportions that children bear to the adult population. They constitute a much higher proportion of the total in rural than in urban communities as Statement V shows. There are, roughly speaking, 2 children to 3 adults in rural Canada, as compared with approximately 2 children to 4 adults in urban parts.

V.—NUMBER AND PERCENTAGE OF THE POPULATION UNDER AND OVER THE AGE OF YOUTHFUL DEPENDENCY, CANADA AND PROVINCES, 1931

Province	Age Group			
	Under 18		18 and over	
	No.	P.C.	No.	P.C.
CANADA.....	3,912,668	37.72	6,460,347	62.28
Rural.....	1,988,026	41.22	2,834,962	58.78
Urban.....	1,924,642	34.67	3,625,385	65.33
Prince Edward Island.....	33,518	38.07	54,513	61.93
Nova Scotia.....	199,507	38.91	312,225	61.09
New Brunswick.....	170,990	41.89	237,161	58.11
Quebec.....	1,204,073	43.27	1,669,532	56.73
Ontario.....	1,151,149	33.55	2,279,063	66.45
Manitoba.....	265,342	37.90	434,050	62.10
Saskatchewan.....	389,208	42.23	532,388	57.77
Alberta.....	284,721	38.92	446,706	61.08
British Columbia.....	208,648	30.11	484,105	69.89

There are still wider differences between provinces. British Columbia and Quebec represent the two extremes. If we make the dividing line the age of political majority, *i.e.*, 21, rather than the age of economic majority, we find that there are 2 adults for 1 juvenile in British Columbia as compared with an approximately equal number of each in Quebec.

It is probably to be expected that where the proportion of children is highest the financial strain of raising them will be felt most. This may be reflected, for instance, in the amount of schooling received by the children of different provinces. Where the proportions of children in the total population are lowest their average length of schooling is greatest, and *vice versa*. It is shown in the companion study *Illiteracy and School Attendance* that the number of years' schooling received per child under school attendance conditions of 1931 was as follows in the different provinces: Nova Scotia, 8.73; New Brunswick, 7.96; Quebec, 7.78; Ontario, 9.20; Manitoba, 8.68; Saskatchewan, 8.39; Alberta, 8.82 British Columbia, 9.15. Arranging the provinces in order according to the proportions of children in their population, and according to the average length of schooling of their children, they appear as follows:—

Lowest to Highest Proportion of Children		Longest to Shortest Average of Schooling	
1. British Columbia.	5. Alberta.	1. Ontario.	5. Manitoba.
2. Ontario.	6. New Brunswick.	2. British Columbia.	6. Saskatchewan.
3. Manitoba.	7. Saskatchewan.	3. Alberta.	7. New Brunswick.
4. Nova Scotia.	8. Quebec.	4. Nova Scotia.	8. Quebec.

Where the order of the provinces is not the same in the two groups, differences between them are generally small. In the case of British Columbia and Ontario, for instance, the lengths of schooling are almost identical.

As the problem of supporting children is essentially a family problem, it is in order to consider the relative weights of it in different areas from the family standpoint. The Census of 1931 counted 2,419,360 private families in Canada, and the following statements are arranged to show how the responsibility for the country's children (those living in families) was distributed among them.

VI.—FAMILIES AND PERCENTAGE WITHOUT CHILDREN, RURAL AND URBAN, CANADA AND PROVINCES, 1931

Province	Families					
	No.			P.C. without Children		
	Total	Rural	Urban	Total	Rural	Urban
CANADA.....	2,419,360	1,085,781	1,333,579	30.99	31.21	30.81
Prince Edward Island.....	20,466	15,774	4,692	31.64	31.81	31.05
Nova Scotia.....	118,780	66,515	52,265	29.86	32.14	28.65
New Brunswick.....	88,301	58,363	29,938	27.10	26.47	28.60
Quebec.....	879,252	106,211	383,041	26.17	24.16	27.20
Ontario.....	872,377	330,371	542,006	32.67	32.74	32.63
Manitoba.....	159,013	83,793	75,220	27.61	26.64	28.70
Saskatchewan.....	209,699	139,314	70,385	30.47	30.70	31.99
Alberta.....	182,113	110,834	71,279	34.44	35.78	32.37
British Columbia.....	189,359	84,600	104,753	40.49	45.01	36.84

By reason of the fact that many farmers on retirement take up residence in town or city, it might be expected that a higher proportion of urban than of rural families would be without children at home, but this is not the case. There is also a movement of young people to the cities which keeps the balance comparatively even. The average rural family with children, however, has definitely more than the town family, as Statement VII shows.

VII.—FAMILIES WITH CHILDREN AND AVERAGE NUMBER OF CHILDREN IN EACH, RURAL AND URBAN, CANADA AND PROVINCES, 1931

Province	Number of Families with Children			Average Number of Children per Family		
	Total	Rural	Urban	Total	Rural	Urban
CANADA.....	1,609,634	746,929	922,705	2.92	3.22	2.68
Prince Edward Island.....	13,991	10,756	3,235	2.09	3.03	2.86
Nova Scotia.....	83,316	45,136	38,180	2.97	3.03	2.91
New Brunswick.....	64,293	42,916	21,377	3.24	3.46	2.79
Quebec.....	427,673	148,807	278,866	3.58	4.19	3.22
Ontario.....	587,374	222,202	365,172	2.50	2.70	2.38
Manitoba.....	115,102	61,468	53,634	2.88	3.21	2.51
Saskatchewan.....	145,807	97,940	47,867	3.15	3.39	2.66
Alberta.....	119,388	71,180	48,208	2.83	3.09	2.45
British Columbia.....	112,690	46,524	66,166	2.33	2.48	2.23

It is particularly noticeable that the largest families, those with 10 children or more living at home, are in rural communities, and the smallest in urban. Statement VIII shows that 3 out of 5 families with a single child are urban, and that as the size of family increases a lower proportion are found in cities and towns. Among families of 10 or more children the proportions are more than reversed; 2 out of 3 are rural. A similar relationship exists between the size of families in large cities (those of 30,000 population or more) and the smaller urban centres.

VIII.—RURAL AND URBAN FAMILIES WITH CHILDREN, BY NUMBER OF CHILDREN IN EACH, CANADA AND PROVINCES, 1931

Province	Number of Families with Children Living at Home Having					
	1 Child	2 Children	3 Children	4 Children	5-9 Children	10 Children or more
CANADA—						
Rural.....	199,048	104,492	120,132	85,070	163,587	13,800
Urban.....	304,802	235,873	150,510	92,865	131,815	6,840
30,000 and over.....	175,448	135,223	83,458	49,046	62,903	2,755
1,000-30,000.....	109,518	85,338	56,519	36,751	57,450	3,412
Under 1,000.....	19,836	15,312	10,533	7,068	11,462	673
Prince Edward Island—						
Rural.....	3,089	2,429	1,734	1,206	2,184	114
Urban.....	1,042	755	478	351	578	31
Nova Scotia—						
Rural.....	13,429	10,050	7,007	5,027	9,074	552
Urban.....	11,573	8,850	6,153	4,374	6,931	299
New Brunswick—						
Rural.....	10,587	8,515	6,518	5,151	11,307	838
Urban.....	6,900	5,220	3,290	2,237	3,543	181
Quebec—						
Rural.....	27,953	24,000	20,545	17,717	51,202	7,390
Urban.....	74,532	60,809	44,679	32,215	61,725	4,906
Ontario—						
Rural.....	71,458	56,197	37,148	23,465	32,577	1,356
Urban.....	136,298	99,914	58,631	32,809	36,622	898
Manitoba—						
Rural.....	15,198	13,711	10,684	7,512	13,553	810
Urban.....	17,887	14,663	9,350	5,442	6,164	128
Saskatchewan—						
Rural.....	22,678	20,667	16,309	12,602	24,000	1,684
Urban.....	14,931	12,532	8,439	5,289	6,405	211
Alberta—						
Rural.....	18,593	16,285	12,211	8,857	14,500	734
Urban.....	16,337	13,537	8,659	4,680	4,991	104
British Columbia—						
Rural.....	16,066	12,638	7,976	4,532	5,190	122
Urban.....	25,302	19,587	10,931	5,468	4,798	82

Should Town and City Pay for Rural Schooling?—In spite of the relatively greater number of rural children, the urban population increases faster because of young people from the farms going to the city to make their homes. By reason of this migration it could probably be argued that the cities have reason to take an interest in, if not to be partly responsible for, the upbringing of rural youth.

The cost of schooling is the only considerable part of the cost of rearing a child that is not paid directly by the parents, and as such it represents an opportunity for urban communities to assist in the rearing of the rural children who will become their residents and supporters a few years later. Actually in all provinces at the present time there are certain provincial grants to schools which give more assistance to rural communities than would be given on a purely *per capita* basis, but they do not account for a very considerable share of total rural school costs.*

IX.—POPULATION AT CERTAIN SINGLE AGES 10-30 AND NUMBER AND PERCENTAGE IN RURAL COMMUNITIES, CANADA, 1931

Age	Population		
	Total	Rural	
		No.	P.C.
10.....	232,180	116,424	50.14
15.....	205,151	101,752	49.60
16.....	215,789	104,179	48.28
17.....	210,513	100,599	47.79
18.....	210,969	98,960	46.91
19.....	197,169	90,901	46.10
20.....	189,389	85,407	45.13
21.....	189,371	84,771	44.76
22.....	181,599	80,153	44.14
23.....	178,990	77,238	43.15
24.....	171,856	73,855	42.98
25.....	165,922	70,378	42.42
30.....	163,230	67,348	41.26

A conception of the proportions of the cityward movement of rural young people may be gained from Statement IX. At the age of 10 or 15 about 50 p.c. of the population lives in rural areas, at the age of 25 or 30 not much more than 40 p.c. A certain amount of the difference may be due to urban birth rate having fallen more rapidly than the rural, but most of it is due to rural-urban migration. If it were all due to the latter, it would mean that the country loses more than 15 p.c. of its children to the city, or in other words more than 15 p.c. of its investment in children is turned over to the cities. And according to our earlier calculations in this chapter only about 13 p.c. of the cost of raising children is for their schooling. So if the complete cost of rural schooling were paid by urban communities, the latter would be paying almost the equivalent of the cost of raising the number of rural young people who become their residents in adult years.

*For a summary of these see *Annual Survey of Education in Canada 1934*, Chap. I.

CHAPTER III

SOME CONSIDERATIONS ON THE COST OF SCHOOLING

As the largest item in the cost of raising a child which is made out of public funds, the cost of schooling receives perhaps a disproportionate share of public interest. The present chapter will cater to this specialized interest by offering some general considerations which may help to judge the propriety of the expenditures made on schools in recent years.

The expenditure for all Canadian schools and institutions of higher learning, public and private, is shown in the *Annual Survey of Education in Canada 1930* and *1932* to have been about \$165,000,000. The intervening year is the only one in which it was ever higher. About \$20,000,000 of this is the share of universities and colleges, something like \$35,000,000 is spent on the high school students, and \$110,000,000 on the elementary.

A. EXPENDITURE FOR SCHOOLS CONSIDERED IN RELATION TO NATIONAL INCOME AND OTHER ITEMS OF NATIONAL EXPENDITURE

By considering the sum of \$165,000,000 for schools as one item in the total amount of money that we spend in a year, we are setting it in perspective in such a way as to make clear its real weight or burden from a national standpoint. It is scarcely possible to see clearly all the details of the panorama of national expenditure, of which education is one, but there are parts of it that stand out in full view—as for instance in the 1931 Census of Retail Trade—and we know from a variety of sources the approximate extent of the whole.

National Income and Expenditure.—The Census of 1931 found that the earnings of 2,477,038 persons in Canada working for wages or salaries were \$2,102,877,400 in the preceding year. There were also 88,963 wage-earners whose earnings were not recorded and 1,361,590 gainfully-occupied persons who were not on salary or wages; these were the employers and people working on their own account, like farmers, small storekeepers, doctors, etc. If we suppose that these earned from their businesses and professions on the average the same as the earnings of those who were working for a fixed salary or wage, the combined earnings of all would have been \$3,392,854,200. This is probably a conservative assumption, because the earnings of the average independent worker or employer may be higher than those of the employees. So without calling this figure an estimate, it may be considered to provide an idea of the proportions that the aggregate income from labour or services probably assumed. In addition to this type of income—the reward of labour or effort—there is the income received from capital, which appears as interest, dividends, rentals, gains from sale of assets, etc., and income from insurance or pensions. These sources provide the entire income of a group of people not included at all among the gainfully employed, to whom we have attributed probable earnings of the magnitude of \$3,392,854,200, and they also yield sums to many of those in the larger group, which must be added to their earnings to make their total income. For the United States it has been estimated that the effort-income represented only 73.5 p.e. of the total in 1929. If a similar ratio should be considered to exist in Canada, it would point to an aggregate national income in the vicinity of \$4,600,000,000. It is probably a liberal assumption to suppose that the proportion of unearned income in the total is as high in Canada as in the United States, but offsetting this is the fact that the figure for earned income is likely conservative.

*The Canada Year Book**, by quite a different approach, estimates the national income of 1930 to have been in the neighbourhood of \$4,750,000,000. The method used in reaching this figure is to find the value of goods produced (using the term in the narrow sense of primary production and manufacture) and the number of people engaged in producing these goods, then

*1933 edition, published by Dominion Bureau of Statistics, p. 203.

to assume that all others who were working (*e.g.*, people engaged in transportation, professional and personal services, etc.) produced the same value *per capita*. From the total thus obtained 8 p.e. is deducted for the replacement of equipment used up in the process of production, leaving a net income of \$4,750,000,000, a figure which differs only about 3 p.e. from the one calculated from earnings. Moreover, the earnings figures apply to a year ending 5 months later than the production figures, at a time when productive activity was on the decline. So it can perhaps be safely assumed that either figure presents a reasonably accurate conception of the dimensions of the national income.

Having settled on this figure, we are in a position to see that the \$165,000,000 in support of schools and colleges was about 3.5 p.e. of the money that there was to spend in the year; and we can proceed to compare this amount with what was spent for other purposes.

How the Canadian Consumer Spends His Income.—As already mentioned, anything like a complete classification of the aggregate expenditure of Canadian consumers is not to be had, but there are complete or partial records of some types of expenditure that are sufficient to help toward a sense of balance or proportion in judging of the real weight of any one.

Food, Clothing, Shelter.—Expenditure for food, clothing and housing is, in one sense, in a class by itself, since the human body must have these if life is to be sustained. It is quite certain that all the money actually spent for these purposes is not strictly essential for maintaining population at its existing level of vitality, as there are probably few who can not recall outlays of this kind made needlessly, if not unwisely. But under post-War conditions of life on this continent and in Great Britain, various calculations* seem to show about 55 p.e. of our expenditures come under these categories. The Feavearyear estimates for Great Britain (1924-27) show 54.4 p.e., the Business Week estimates for the United States (1919-30) show 55 p.e., and the Hoyt (1926) show 56 p.e. When the difference is so small between these two countries that are nearest to us in ways and standards of living, it seems a safe assumption that the proportion is much the same in Canada.

Broadly speaking then, nearly half of our income remains after the bare physical necessities of life have been met. If we suppose that one dollar in each eleven spent for food, clothing and shelter is unnecessary or superfluous, fully half remains, and about 7 p.e. of this half goes to the support of schools and colleges, though it is not paid by the consumer for educational institutions as such. Much the greater part of it leaves the person who has earned it, in the form of taxes, and is spent by the various governmental bodies acting in a collective capacity for the aggregate of individuals.

Direct Taxes.—The fact invites consideration of a second call upon the consumers' funds in the form of taxes, a necessitous call also, but differing in the nature of its necessity from the demand for food, clothing and shelter. The combined amount of taxes paid to the Dominion, Provincial and Municipal Governments in 1930-31 was approximately \$700,000,000,† or about 15 p.e. of the sum of consumers' expenditure.

Only a fraction of the total, however, was paid directly as taxes; the remainder was paid in the form of higher prices for commodities or services and is included in the cost of clothing, rents, and the like. The knowledge of taxation incidence is not sufficiently complete to divide all taxation into the two classes completely, but the total of real and personal property taxes, income taxes, and succession duties, which would be mainly in the direct class, amounted to less than \$400,000,000, whereas the aggregate of customs, excise, gasoline and sales taxes, profit on liquor sales and other indirect taxes was over \$300,000,000. A considerable part of the former sum, especially since two-thirds of it represents real property taxes, must have been paid in the form of higher rent rather than out of the profits of the person owning the property. This amount is included in shelter costs, and it accordingly seems safe to suppose that at least half of all taxes were paid indirectly, leaving not more than \$350,000,000, and probably less, to be paid directly. Something like 7 p.e. of consumer expenditures, then, seems to be paid out in taxes, as such.

*As summarized by *The Business Week*, Issues Apr. 27 to Sept. 7, 1932. McGraw-Hill Publishing Co., New York.

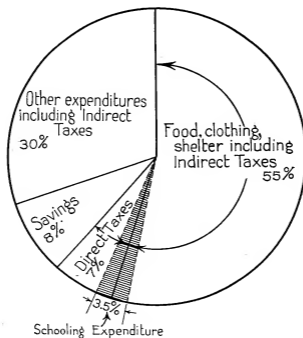
†See *Cost of Government in Canada*, a pamphlet prepared by the Research Committee of the Canadian Chamber of Commerce, and other studies such as those by the Citizens' Research Institute of Canada.

A General Classification.—The foregoing would indicate that the Canadian consumer's expenditure could be classified roughly as follows:

1. Food, clothing and housing, including taxes paid as part of the purchase price.... 55 p.c.
2. Direct taxes (being mainly on real estate and thus paying much the greater part of school costs)..... 7 p.c.
3. Savings, probably..... 8 p.c.
4. Other expenditures, including taxes paid as part of the purchase price..... 30 p.c.

Chart 6

APPROXIMATE DISTRIBUTION OF CANADIAN CONSUMER EXPENDITURE



Indirect taxation, which we have taken to be about 8 p.c. of all expenditure, is probably more than proportionately included under the last heading as compared with the first. That is, the rate of taxation averages higher on the commodities included in the latter group. For instance, the profits of Provincial Governments from liquor traffic (included as taxes) exceeded \$30,000,000 and the Dominion Customs and Excise on alcoholic beverages exceeded \$36,000,000 in the fiscal year ending in 1931, whereas the Census of Merchandising, 1931 showed sales of \$131,375,000 by liquor stores and taverns in the preceding year, indicating that roughly half of the purchase price of spirituous beverages on the average represents taxes. Similarly with tobacco and its products. Tobacco manufactures in 1930 were valued at \$85,672,000 and something like half of this sum must have represented excise duties, for the excise collected on tobacco in the nearest

fiscal year was over \$42,000,000. Liquor and tobacco are rather exceptional among the commodities purchased in important quantities, in the high proportion of their costs constituting taxes, but other much-used commodities, such as motor vehicles and gasoline, include a relatively high proportion of taxes in their purchase price, as compared with food and clothing.

How the Residual Thirty Per Cent Is Spent.—The summary above shows a balance of about 30 p.e. after allowing for food, clothing, shelter, direct taxes and savings. This 30 p.e. would represent a sum in the neighbourhood of \$1,425,000,000.

The Census of Retail Merchandising and Service Establishments, 1931 indicates how a part of this money was spent, but the census classifies sales according to the kind of store in which they were made, and it is only in relatively few cases that the sales of any particular type of commodity or service can be obtained from such a compilation. The receipts of motion picture houses, for instance, are recorded at \$39,233,200, and this is probably very near the total amount spent on the movies, but the receipts of bowling alleys and billiard parlours are shown to be \$7,772,600, those of barber shops and beauty parlours \$23,085,700, and those sums are likely to be short of the total amount spent for the services that establishments of these two kinds offer, since many hotels, tobacco stores, etc., have barber shops or pool rooms, the receipts from which are not included. Nevertheless the Census of Retail Establishments provides much useful data for studying the details of Canadian expenditure.

A second method of obtaining knowledge of the amount spent for different commodities is to add the value of imports and subtract the value of exports from the value of goods produced, as shown in the production figures and Census of Manufactures of the Dominion Bureau of Statistics. Thus a conception of the expenditure for medicine might be gained by noting that the value of medicinal and other pharmaceutical preparations manufactured in Canada in 1930 was \$17,769,000 and imports of such products exceeded exports by \$3,428,000. Similarly manufactures and net imports of scientific and professional equipment (a large proportion of which would be for the use of doctors, dentists, etc.) had a value of \$10,392,000. With these figures as a basis it would be possible to obtain a conception of the total expenditure for health purposes. The Census of Institutions in 1931 showed the budgets of hospitals to be in excess of \$58,000,000. If the earnings of all doctors, nurses and other health professionals such as dentists, opticians, etc., were the equivalent *per capita* (in each group) of those on hospital staffs or otherwise on salary, the amount paid to all health professionals would have been \$53,400,000. The five sums added together make some \$143,000,000 definitely attributable to health purposes, though because some of the hospitals are supported by taxation, not all of the total can be called consumer expenditure.

Various other methods can be used for obtaining an approximation of other types of expenditure. A special compilation of the Dominion Bureau of Statistics* estimates the expenditure of Canadian tourists abroad to have been \$100,389,000 in 1930. In the three preceding years it was substantially higher, but in 1931 dropped to \$76,452,000. Expenditure for personal travel and holidays at home would have to be estimated from a variety of sources.

The amount provided for the support of churches is published by three of the five religious denominations in Canada claiming the most adherents. These three show a total of \$23,200,000 raised for all church purposes in 1930, and the Census of 1931 shows that their adherents constituted 32 p.e. of the population. If the supporters of other denominations contributed the same *per capita*, the amount raised by all churches would have been about \$73,000,000.

Such are some of the probable sums included in the 30 p.e. of Canadian consumer expenditure that remains after food, clothing, housing, savings and direct taxes are paid for—and some indications of the manner in which other of these expenditures may be ascertained. The sums mentioned scarcely account for half of the 30 p.e. The largest item of the group for which a figure is not indicated is undoubtedly motor cars and other means of passenger transportation, another important one is expenditure for personal adornment including cosmetics, jewelry, etc. Still others are confectionery, fees for membership in societies, the cost of correspondence, reading material, music, sports, and other private educational, social or recreational activities.

*The Tourist Trade in Canada. Published annually.

B. INVESTMENT IN SCHOOLS IN RELATION TO NATIONAL WEALTH

After considering the place of schools' cost in the national expenditure it may be of interest to indicate briefly the value of our investment in them as compared with other forms of the national wealth. The latter will not be listed at length for they may be consulted in another publication* of the Dominion Bureau of Statistics. The figures apply to the year 1933.

X.—CANADA'S INVESTMENT IN SCHOOLS, 1933

Item	Value of Lands, Build- ings and Equipment	Debt Indebtedness
	\$	\$
A. Ordinary publicly-controlled schools—		
British Columbia.....	25,000,000 ¹	15,448,396
Alberta.....	22,556,465	11,074,602
Saskatchewan (secondary schools estimated).....	32,000,000	10,000,000
Manitoba.....	19,295,151	15,579,829
Ontario.....	161,894,033	84,722,797
Quebec.....	103,722,595	71,446,847
New Brunswick.....	10,000,000 ¹	4,577,420
Prince Edward Island.....		
Nova Scotia.....	10,102,372	6,000,000 ¹
CANADA.....	384,571,187	224,849,888
B. Universities and colleges (valuations recorded except in few cases).....	145,000,000	No data
C. Normal schools, private schools, Indian schools and special schools.....	50,000,000 ¹	No data
Total, all schools and universities.....	579,571,187	

¹ Estimated.

The school investment of nearly \$600,000,000 represents about 2 p.c. of our total estimated national wealth. It is about double our investment in telephones; equal to our investment in the electricity supply industry; comparable to, but less than, our investment in the mining industry or in automobiles; about one-fifth or one-sixth of our investment in railways; about one-tenth or less of our investment in farming.

There is still a considerable part of the investment in schools to be paid for by the public. The ordinary publicly-controlled schools are valued at less than \$400,000,000, and there is an indebtedness against them of more than half this amount.

C. EXPENDITURE FOR SCHOOLS IN 1931 AS COMPARED WITH 1913

Another common method of testing the propriety of expenditures is to compare the present with an earlier date. This will be done in the case of school costs in the paragraphs that follow. The earlier year chosen is the customary one for long-term comparisons, the last entirely pre-War year. The recent year is 1931, the basic year to which all of the data of this study are related as far as possible.

On an earlier page it was recorded that some \$145,000,000 in recent years has been spent annually on elementary and secondary schools. All but some \$5,000,000 of this is for publicly-controlled schools, and the \$140,000,000 compares with \$54,000,000 in 1913. The increase in terms of percentage is 160 p.c., substantial in itself, and in comparison with the increase of 40 p.c. in population during the period; but it is scarcely more adequate evidence for concluding at once that too much is now being spent for schools than the fact that during the same time telephones increased 200 p.c., and automobiles 2,300 p.c. is proof that too much is now being expended on these commodities. Times change and the role of the school in society may grow as does the place for means of communication or transportation.

The Cost of a Day's Schooling in 1931 as Compared with 1913.—In the first place a dollar in recent years has not represented the same amount of purchasing power as in 1913. The retail price index of the Dominion Bureau of Statistics (1926=100) which was 66.0 in 1914,

*Canada's National Wealth. Published 1930.

was 99.9 in 1929, 99.2 in 1930, 89.6 in 1931. It has since moved lower, as also has expenditure on schools. The retail index, since it indicates the changed cost of food, fuel, rent, clothing, etc., will be the best available guide as to the relative value of a dollar in the hands of the consumer in the two periods. And since the present problem is to compare the real cost to him of schooling in the two periods, it will be the proper guide to use. Thus, it appears at once that in terms of the things he buys every day—food, clothing, shelter, etc.—the Canadian taxpayer was spending, for schools in 1931 not 160 p.c. more than in 1913, but only 91 p.c. more.

Over the period 1913-31 there was an increase in enrolment at the publicly-controlled schools from 1,438,000 to 2,214,000. This fact considered together with the changed value of the dollar shows that the cost per pupil enrolled in the schools was only 30 p.c. more in 1931 than in 1913.

Regularity of attendance has improved much in recent years, or in other words, the proportion of the year's enrolment in average daily attendance at school is higher than formerly. The number of pupils in actual attendance is a better guide to what the schools are accomplishing than is the number on the roll, and since the present problem is to show what the schools are giving in return for what is being spent on them, it should be recorded that the average daily attendance has risen from 942,000 in 1913 to 1,756,000 in 1931, indicating that the cost per pupil at school on the average day in terms of the purchasing power of the consumer's dollar, was only 2 p.c. higher in 1931.

Further, the number of days that the average school keeps open in a year has increased considerably in the last two decades. And as it seems reasonable to suppose, for example, that a teacher can do for her pupils in five days five-fourths of what she can do in four days, it is necessary to show the effect of the longer year on the value that the schools are giving. In the Western Provinces the school year has lengthened a full month, but they are exceptional. Not all of the other provinces have kept records to show the change, but available evidence would indicate that the average for the Dominion is in the neighbourhood of two weeks, or ten teaching days. From this it can be calculated that the amount of purchasing power expended for a day's instruction in the schools of 1931 was about 3 p.c. less than in the schools of 1913.

Moreover this achievement of 1931 took place in spite of the fact that a much higher proportion of the students were in the higher grades, which are more costly to accommodate. As compared with an increase of about 50 p.c. in the enrolment of the elementary grades, there was an increase of more than 200 p.c. in the secondary grades, and pupils in the latter category are just about twice as expensive as those in the former. From this situation it can be deduced that the real cost of a day's instruction in 1931, if the distribution between elementary and secondary grades had been the same as in 1913, would have been only 90 p.c. of what it was in the earlier year.

From this it is obvious that what might be called the mechanical efficiency of the schools is higher now than in the pre-War years, i.e., a day's schooling is now given at a cost that is really lower. It follows that if criticism of school costs is to be made on the basis of a comparison with 1913, it must be on the ground that children are now receiving too much free schooling. And as to whether or not this is so, the figures on school survival may be recalled; in summary, two-thirds of the children who start to school go as far as the end of the elementary years, about half do some high school work, and one-fifth reach the final or matriculation year.

The Quality of a Day's Schooling To-day as Compared with 1913.—Let it be repeated that the foregoing comparison is made on a purely mechanical basis: it has simply shown the schools to have become more efficient "businesses" in the production of units that might be called "pupil-days instruction". Whether there has been any change in the quality of the product is another question.

There are numerous statistical grounds for believing that there has been an improvement in this respect—e.g., the more thorough training that has been received by the average teacher of to-day, and the improvement in school equipment. Such a change, qualitative in nature, cannot be measured directly with the precision of the quantitative change in cost per unit of work done, but some of the relevant numerical facts can be mentioned.

In all of the provincial school systems, except the Roman Catholic system of Quebec, teachers in 1931 and in 1913 can be grouped in three classes according to their professional qualifications as follows: first class or higher (the higher representing high school teachers' licences and bearing a variety of names), second class, third class or lower. This grouping, without implying that the certificates of any one of the classes represent the same standing in all, or even in any two, of the provinces, is a permissible device for measuring the relative change in the status of the teachers of all provinces together. In the period 1913-31 the first-class group increased its proportion in the total from 17 p.c. to 38 p.c., the second-class group increased from 50 p.c. to 55 p.c., whereas the third-class group decreased from 33 p.c. to a mere 7 p.c. More than a quarter of those in the third group in 1913, or 9 p.c. of all teachers, had no recognized qualifications at all, but were allowed to teach simply because qualified teachers could not be secured. Such teachers had all but disappeared in the records of 1931.

The improvement in class-grouping is very considerable but it tells only a part of the story. The qualifications required for standing in any one of the classes have been raised repeatedly throughout the period. Higher academic standing, more normal school training, summer school attendance, and so on, have been demanded of the teachers who are now in the schools, as compared with those who were teaching twenty years ago. The changes in this respect have been so numerous and diverse as not to lend themselves readily to classification, but there are probably few people who are not in some measure familiar with them in one province at least, for every province has participated in the improvement. Such changes must have tended to produce more capable teachers, or in other words, to improve the quality of the educational process which it is the teachers' task to direct.

Another characteristic of present day teachers which should make for better teaching is their tendency to stay longer in the profession. Half of the Maritime teachers of 1913 had taught less than $3\frac{1}{2}$ years; those of 1931, more than $4\frac{1}{2}$ years. Half of the Quebec lay teachers had taught no more than about 3 years in 1913, but 5 years in 1931. There was a corresponding change in Ontario, though not as great, for the Ontario teachers were more permanent in the earlier year. The Western Provinces have not kept a record of teachers' experience since 1913. But the Education Branch of the Dominion Bureau of Statistics has compiled a record for Manitoba for about half of the period, and if it is a fair indication of what has been happening in these provinces, as there is good reason to believe, the increase in length of tenure has been even more pronounced than in the more easterly provinces.

Apart from what appears to be more capability on the part of the teachers, they have on the whole better buildings and equipment at their disposal, and in the secondary grades particularly there is now a greater diversity of opportunity open to the students in the selection of courses. (The Agricultural Instruction Act of 1913 and the Technical Education Act of 1919 have exerted almost their full force in the period under consideration.) Though these things in themselves do not ensure a corresponding improvement in the quality of education, they make its attainment easier of realization; and, considering that their arrival has been accompanied by all the evidences of a more competent teaching body, it is probably safe to assume that they have made a considerable contribution to improvement in the output of the schools, whether that output be considered in the form of an isolated day's schooling, the aggregate of days' schooling that a child receives, or that unity, transcending the aggregate of component days again, which is the child's education.

Paying for the Schools in 1913 and in 1931.—What has been shown in the preceding pages may be summarized as follows: in 1931 as compared with 1913, we were unmistakably getting better value for the money spent on schools than the money spent for other things. In other words, the cost of everything averaged higher in 1931, but the cost of a day's schooling had not increased in as high a proportion as the cost of the other things the consumer buys, and there is strong evidence that the quality of it was at the same time definitely improved. If the component parts of the retail price index are considered, it will be seen that the only purchases yielding anywhere near as good value as schools (1931 as compared with 1913) were food and clothing; rents, fuel, services, etc., were comparatively much dearer.

But the fact that a day's schooling was cheaper in 1931 does not imply that the schools were more easily supported financially. Much more schooling was being given, and it may be that ability to pay for it had not increased at a corresponding rate.

We have already seen that in terms of retail purchasing power the schools were costing 91 p.c. more in 1931 than in 1913. This does not mean, however, that the increase in burden was 91 p.c., for there were more people to pay it. In 1931, there were 3,924,523 persons gainfully occupied; in 1911 there were 2,723,624, and if it was the same proportion of the 1913 population (Dominion Bureau of Statistics' estimate) that was employed, there were about 2,885,000 gainfully occupied in that year. From this it can be readily calculated that the cost of schools per person gainfully occupied, was about 40 p.c. higher in 1931 than in the earlier year.

There are other sources of income than an occupation, but it is hardly possible to compare their relative importance in the two years, and in any case their yield is small in the aggregate as compared with the income of the gainfully occupied, for this expression covers all those who are working on their own account, such as farmers, shopkeepers, lawyers, etc., as well as those who are working for salaries or wages. So it is probably not far from the truth to say that the burden of school support, from a national standpoint, was about 40 p.c. heavier in 1931 than in 1913, in spite of the fact that a day's schooling was cheaper in the later year.

The statement is true only in so far as the number of people gainfully occupied is an index of the purchasing power produced. In the long run, and from the national standpoint, it is probably reliable as such an index. But in any single year, or as regards any particular group of producers, it may be very far from it. Consequently the statement is likely to be more valid in expressing the weight of school cost in recent years as compared with pre-War years, than in comparing one recent year with one pre-War year.

The fact that the statement applies to the country as a whole, but not necessarily to any particular section or group in the whole, has a very important significance for the study of school support, because schools are supported by groups or sections of the population independently, and not on a national or provincial basis. In rural communities particularly, the group supporting a school is generally not larger than a few dozen ratepayers, all or nearly all of whom are farmers. Though the country's schools as a whole may be only 40 p.c. harder to support than they were twenty years ago, for any particular community its school may be 80 p.c. or 100 p.c. more burdensome, and the school of another community correspondingly less. Since it is the ratepayers of the former school from whom more is likely to be heard on the matter of school costs, there is danger that an exaggerated impression may be created as to the increased costliness of schools generally.

The rural school is the most common case of violent fluctuation in the difficulty of school support, but other less common cases where the difficulty may become equally acute are fishing villages, mining or pulp and paper towns, and other communities where there is a lack of diversity in occupation or of stability in population numbers.

In the last few years, rural schools as a group have undoubtedly suffered more from failure of support than urban schools. The salaries of rural teachers in all provinces have declined much more than urban*. The condition producing this result has been the exceptionally depressed level of prices for agricultural produce, the index† for which stood at 46.9 in 1931, and 40.4 in 1932, as compared with 69.6 in 1913. If the volume of produce had been the same in 1931 as in 1913, the farmers' school costs would have been about 50 p.c. harder to meet even though they had not risen in dollars at all.

Violent fluctuations of this kind in the conditions affecting any industry may be in the main unavoidable, but the effects of them on a particular group of schools and on the people in that industry in their capacity of school supporters, could in a considerable measure be offset by making the entire population of a large and diversified area responsible for all of the schools in the area. Recent surveys of school support in most of the provinces have recommended the province as a whole to be the most desirable area for this purpose, supplemented usually by municipal or county areas.

A distinctive feature of certain grants in all provinces is their tendency to give more assistance to rural communities than would be given on a purely *per capita* or per pupil basis, so it is not for lack of precedent that equalization does not become more general, but rather by reason of the

*See comparisons in the *Annual Survey of Education in Canada 1936*. Dominion Bureau of Statistics.

†*Monthly Bulletin of Agricultural Statistics*. Dominion Bureau of Statistics.

practical difficulties involved. From the side of the local communities the chief hesitancy seems to lie in the fear that a substantially higher proportion of provincial support would logically entail a corresponding centralization of administrative powers, which might make the school less of a community enterprise, a less organic part of the community life.

From the standpoint of the Provincial Governments the practical difficulty is one of raising the money required in order to assume a greater share of school costs. The misgivings of local communities could probably be overcome by the gradual assumption of an increased share of school costs, on the part of provincial legislatures, such as might be commenced if these bodies felt that their revenues would permit it. But for twenty-five years their budgets, considering all provinces together, have more often than not failed to balance, and in the last few years failure in this respect has been the rule. With this experience behind them, it is hardly to be expected that the Provincial Governments can, with their present sources of revenue and their present necessary outlays, undertake a responsibility that would increase their total annual expenditures by something like one-half, as would the assumption of the running costs of the public school systems. Hence it would seem that a general solution of this nature to the problem of school support, may be dependent on some redistribution of taxing powers or practices among Municipal, Provincial and Dominion Governments, such as has on occasion been discussed at Dominion-Provincial conferences; or alternatively, a shifting of responsibilities among the three so that the Provincial Governments would be able to spend more of their income on schools.

CHAPTER IV

THE FAMILY CIRCUMSTANCES OF CANADIAN CHILDREN AND THEIR EFFECT ON EDUCATION

Chapter II has attempted to indicate in financial terms the responsibility involved in raising a child, and to show something of its regional distribution. In the great majority of cases this responsibility, except for the cost of schooling and a few incidentals, falls directly on the parents. The present chapter will show the frequency with which it falls on, or is accepted by, others than parents, and indicate how the children under the care of others fare in the matter of schooling as compared with children who are living with their own parents. Statement XI shows in summary the number of children in different family circumstances. The detailed tables from which the statements in this chapter are summarized, are published in Volume V of the Census of 1931.

XI.—CHILDREN CLASSIFIED ACCORDING TO THEIR RELATIONSHIP TO THE FAMILY HEAD, BY BROAD AGE GROUPS, CANADA, 1931

Relationship of Family Head	Children in Age Group		
	Under 7	7-14	15 and over
A. In own family.....	1,493,881	1,686,358	1,700,811
With both parents.....	1,433,488	1,540,451	1,325,391
With mother only.....	44,451	97,067	263,013
With father only.....	15,942	48,840	112,407
B. In other families.....	19,145	37,772	27,190
With grandparents.....	9,435	13,958	5,494
With uncle or aunt.....	4,140	10,970	3,385
With brother or sister.....	271	2,744	3,846
Adopted.....	4,346	7,285	6,149
Others.....	898	2,815	2,846
C. Not in families.....	8,046	31,218	1
Total, all children.....	1,521,073	1,755,348	1

¹ Impossible to ascertain, as there is no fixed upper age limit to the "children" counted in this column.

In summary, it appears that nearly 95 p.c. of all children below school age, and nearly 90 p.c. of those at school age, have their two parents living with them. About two-thirds of the others have either mother or father, the mother more than twice as often as the father, especially at the younger ages.

About half of the very young children without either parent are taken by relatives, most frequently by grandparents, but in considerable numbers also by uncles and aunts. Nearly two-thirds of the other half go to institutions, and one-third are adopted. Among those at school ages a much higher proportion is in orphanages, hospitals and other institutions.

The proportion in institutions varies a good deal in different provinces. This will be shown a little later; first we will direct attention to those living in families. The remainder of this chapter will be divided into three sections, corresponding to the categories of children in Statement XI.

Children Living with Parents.—Children living with their own parents are in families varying all the way from 1 to 18 children living at home. The size of the family appears to have some effect on educational opportunity, though not perhaps as much as would be expected. Statement XII is arranged to show how many children live in families of different sizes, and how school attendance and illiteracy vary according to these circumstances.

XII.—NUMBER OF CHILDREN IN FAMILIES OF DIFFERENT SIZES, AND COMPARATIVE SCHOOL ATTENDANCE AND ILLITERACY IN EACH, CANADA, 1931

Size of Family	Children in Age Group				
	7-14		15 and over		
	No.	P.C. at School	No.	P.C. Illiterate	P.C. at School
All sizes.....	1,686,358	94.3	1,700,811	1.4	20.9
1 child.....	93,424	95.3	225,095	1.7	11.2
2 children.....	214,802	95.8	305,890	1.3	21.3
3 ".....	263,935	95.8	290,941	1.2	23.4
4 ".....	262,734	95.0	242,916	1.3	23.8
5 ".....	233,380	94.4	187,709	1.4	22.8
6 ".....	194,076	93.7	140,569	1.6	21.7
7 ".....	152,315	93.1	106,043	1.7	20.5
8 ".....	109,572	92.4	78,233	1.8	19.1
9 ".....	73,164	91.9	53,212	1.8	17.3
10-18 ".....	88,956	91.3	72,203	1.6	15.4

It is likely that in many of the cases where there is only 1 child living at home, and it over the age of 14, the child is defective in some way, perhaps the only defective one in a family of several; this would explain the relatively low percentage of school attendance and literacy in this group. Otherwise there is a comparatively steady gradation toward poorer school attendance and more illiteracy as the family increases in size. Part of the difference, of course, is due to the tendency, mentioned in Chapter II, for larger families to be in rural districts.

Children of school age are more frequently in families of 3, 4 or 5 children, than in larger or smaller, but the most frequent size of family at school age is 2 children.

Another factor that influences the educational status of children is the headship of the family. Living with their father only, education is more likely to be neglected than when with their mother alone, especially at younger ages. Older children are more likely to be obliged to work when there is no father in the family, but in spite of this they are less illiterate than when the mother is not with them. This is perhaps an unexpected situation, considering the difficulty of widows in supporting children, but it may be related to the same source as the fact that it has long been characteristic of Canadian women to be less illiterate than Canadian men—a situation quite the contrary to that existing among the people who have come to Canada from foreign countries. More frequently schooled themselves, they seem to place a higher value on schooling for their children than do the fathers. Statement XIII is arranged to show the parental influence on schooling in communities of the rural, village, town, and city varieties.

XIII.—NUMBER OF CHILDREN LIVING WITH BOTH PARENTS, FATHER ALONE, OR MOTHER, BY BROAD AGE GROUPS, AND THE EFFECT OF THIS CIRCUMSTANCE ON THEIR EDUCATIONAL STATUS IN RURAL AND URBAN COMMUNITIES, CANADA, 1931

Item	Children in Age Group					
	7-14		15 and over			
	No.	P.C. at School	No.	P.C. Illiterate	P.C. at School	P.C. Gainfully Occupied ¹
CANADA—						
With both parents.....	1,540,451	94.37	1,325,391	1.35	23.40	39.06
With mother only.....	97,067	94.51	263,012	1.61	12.40	61.88
With father only.....	48,840	91.63	112,407	2.15	11.98	40.23
Rural—						
With both parents.....	789,778	92.17	636,385	2.31	18.00	23.32
With mother only.....	35,806	91.71	91,900	3.42	9.60	44.92
With father only.....	26,954	88.49	57,328	3.47	8.87	27.16
Urban under 1,000—						
With both parents.....	61,205	96.73	46,508	0.79	33.90	36.91
With mother only.....	5,491	97.10	9,677	1.64	21.29	53.93
With father only.....	1,958	95.05	4,104	1.54	16.93	39.96
Urban 1,000-30,000—						
With both parents.....	307,686	96.21	268,291	0.75	29.22	49.79
With mother only.....	22,439	96.28	57,216	0.99	15.40	66.76
With father only.....	9,145	95.07	21,644	1.14	15.86	49.05
Urban over 30,000—						
With both parents.....	381,785	97.04	384,207	0.29	26.87	67.46
With mother only.....	30,631	96.27	104,220	0.36	12.34	74.90
With father only.....	10,783	95.98	29,931	0.41	14.51	58.67

¹ The percentages gainfully occupied in the final column are slightly high throughout as the figures on which they are based include adopted as well as own children, but the numbers involved are not large enough to affect the percentages considerably.

What is of still greater importance than the maternal vs. paternal relationship in affecting the children's schooling is the literacy status of the parental head of the family. Where both parents are illiterate, one-fifth of the children grow up illiterate, as is shown in Statement XIV. There is a strong presumption that the children's illiteracy in these cases is largely due to inherited inability to learn, for, as will appear a little later, illiteracy is decidedly more prevalent among the own children than among the guardianship children of illiterate heads of families. It seems likely, too, that a certain amount of laxity is involved on the part of illiterate parents, for at the ages of regular school attendance the record of their children is low, lower than can be accounted for by the fact that they are mainly in rural areas.

XIV.—THE RELATIONSHIP BETWEEN PARENTAL ILLITERACY AND THE EDUCATION OF CHILDREN, CANADA, 1931

Literacy of Parent	Children in Age Group					
	7-14		15 and over			
	No.	P.C. at School	No.	P.C. at School	P.C. Illiterate	P.C. Gainfully Occupied
Both parents—						
Both literate.....	1,414,900	95-25	1,202,427	24-74	0-42	39-34
Wife illiterate.....	35,453	88-69	31,455	13-98	0-10	35-39
Husband ".....	55,923	85-40	54,434	8-43	0-75	39-70
Both ".....	34,115	78-14	37,079	9-82	19-24	39-10
Mother only—						
Literate.....	91,887	95-18	248,356	12-75	0-78	62-20
Illiterate.....	5,200	82-60	14,657	9-46	15-70	56-46
Father only—						
Literate.....	44,937	92-93	102,043	12-63	0-83	40-39
Illiterate.....	3,903	76-66	9,784	5-11	16-04	38-48

Another interesting comparison in the matter of their children's schooling is between native-born and immigrant parents. Statement XV shows that whether both parents are living, or only one, Canadian-born parents on the whole do not give their children as much schooling as do immigrant parents. Interprovincial and rural-urban differences in population composition are factors in determining this net result, but it is of significance nevertheless. European-born parents as a group cannot be accused of failing to take advantage of educational opportunities for their children in Canada, and the low percentages of illiteracy among children one generation removed from the British Isles is particularly worthy of note.

XV.—COMPARISON OF THE SCHOOLING OF CHILDREN OF CANADIAN-BORN AND IMMIGRANT PARENTS, BY NATIVITY OF PARENT AND BROAD AGE GROUPS, CANADA, 1931

Nativity of Parent	Children in Age Group					
	7-14		15 and over			
	No.	P.C. at School	No.	P.C. at School	P.C. Illiterate	P.C. Gainfully Occupied
Both parents—						
Father born in Canada.....	992,439	93-15	861,714	22-03	1-78	37-58
" " " Britain.....	251,158	97-84	240,187	26-92	0-10	52-62
" " " U.S.A.....	76,722	95-92	49,300	33-03	0-57	28-12
" " " Europe.....	212,084	96-31	189,902	22-24	1-10	30-61
Mother only—						
Born in Canada.....	62,062	93-30	177,223	11-80	2-06	60-34
" " " Britain.....	17,440	97-63	51,427	12-65	0-20	72-61
" " " U.S.A.....	5,744	96-50	9,763	19-84	0-64	54-04
" " " Europe.....	11,328	95-24	23,820	12-98	1-81	53-59
Father only—						
Born in Canada.....	33,866	89-84	79,795	11-18	2-63	38-30
" " " Britain.....	6,967	97-26	17,535	13-85	0-39	51-82
" " " U.S.A.....	2,276	94-37	3,460	18-61	0-78	33-99
" " " Europe.....	5,434	94-24	11,071	12-01	1-83	37-39

Children in Families Other than Their Own.—For convenience of expression the children living in families other than their own will be referred to as guardianship children. Statement XVI is presented to show the varying percentages of guardianship children in the different provinces. It is particularly high in the Maritime Provinces. The reasons for the variations are not entirely obvious and are probably numerous. The proportion in Nova Scotia, for instance, may be related to the comparatively high rate of illegitimate births in that province.* Varying rates of maternal mortality in the provinces are another factor, also the rural-urban distribution of the population, and the extent of accommodation for orphans in institutions. The proportions are consistently higher at school age than earlier, for the older children have had more years in which to lose their parents.

XVI.—GUARDIANSHIP CHILDREN AS A PERCENTAGE OF THE TOTAL NUMBER OF CHILDREN, BY BROAD AGE GROUPS, CANADA AND PROVINCES, 1931

Province	Guardianship Children in Age Group			
	Under 7		7-14	
	No.	P.C. of Total Children	No.	P.C. of Total Children
CANADA.....	19,140	1.26	37,772	2.15
Rural.....	11,151	1.25	21,571	2.43
Urban.....	7,985	1.27	16,201	1.87
Prince Edward Island.....	387	2.76	697	4.59
Nova Scotia.....	2,007	2.64	3,481	3.82
New Brunswick.....	1,234	1.82	2,452	2.53
Quebec.....	4,914	0.99	10,387	1.97
Ontario.....	5,887	1.34	11,398	2.19
Manitoba.....	1,172	1.23	2,187	1.78
Saskatchewan.....	1,481	0.99	2,897	1.63
Alberta.....	1,125	1.02	2,253	1.75
British Columbia.....	969	1.30	2,020	2.10

The guardianship children do not fare as well in the way of education as do those with their own parents. There is a difference of about 3 p.e. in the proportions of ages 7-14 at school, and among those of 15 years and over the percentage illiterate is nearly double for guardianship children what it is for others. Children living with relatives fare a good deal better than those who are adopted. For instance, about 93 p.e. of those at ages 7-14 living with relatives (other than parents) were at school in 1931, as compared with barely 89 p.e. of those with strangers; and nearly 4 p.e. of adopted children over the age of 15 were illiterate as compared with just over 2 p.e. of those living with relatives. Older sisters and aunts make the best guardians from the standpoint of assuring a child's education; older brothers are not as satisfactory in this respect as uncles or grandparents.

One in every 6 or 7 children raised by an illiterate guardian grows up illiterate. Only three-fourths of the rural children at ages 7-14 living with illiterate guardians were attending school in 1931, and over 18 p.e. of those older than 14 were illiterate. This is one of the most significant relationships revealed by the census information on guardianship children for nearly one-tenth of them are living with illiterate guardians. The figures are summarized in Statement XVII.

XVII.—GUARDIANSHIP CHILDREN CLASSIFIED TO SHOW INFLUENCE OF GUARDIAN'S LITERACY ON SCHOOL ATTENDANCE AND LITERACY OF THE CHILDREN, BY BROAD AGE GROUPS, RURAL AND URBAN, CANADA, 1931

Literacy of Guardian	Guardianship Children in Age Group			
	7-14		15 and over	
	No.	P.C. at School	No.	P.C. Illiterate
CANADA—				
Literate.....	33,098	92.88	25,144	1.40
Illiterate.....	3,774	79.22	2,046	14.90
Rural.....	21,571	88.73	13,400	3.94
Literate.....	18,717	90.72	11,924	2.17
Illiterate.....	2,854	75.64	1,476	18.22
Urban.....	16,201	95.22	13,790	1.08
Literate.....	15,281	95.52	13,220	0.85
Illiterate.....	920	90.32	570	8.31

*See the Annual Report of the Dominion Bureau of Statistics *Vital Statistics*. In 1935 illegitimate births in Canada were 3.8 p.e. of the total; in Nova Scotia, 5.7 p.e.

As is the case of own children, it is more important for guardianship children to have a woman than a man at the head of the family so far as their education is concerned. In fact where the guardian is a widow, a higher proportion of the children are at school than where the husband is living.

Canadian-born guardians have a poorer record in educating their wards than have those born elsewhere. Guardians from the British Isles have the best record, those from the United States almost as good, European and Asiatic not as good but better than the Canadian.

Children Not Living in Families.—Children without any kind of family life are less numerous than those living with foster parents, especially very young children. They are in a variety of institutions— orphanages, shelters, hospitals, under the care of children's aid societies, juvenile immigration societies, etc., and some are boarding or working, living as adults rather than children. Statement XVIII indicates their number in each province in 1931—the number left over after all those in families have been counted. As in the case of guardianship children, they are more numerous at school ages than younger. They are more numerous in Quebec than in other provinces, probably because of the relatively larger number of institutions for children conducted by religious orders.

XVIII.—CHILDREN NOT LIVING IN FAMILIES AS A PERCENTAGE OF THE TOTAL NUMBER OF CHILDREN, BY BROAD AGE GROUPS, CANADA AND PROVINCES, 1931

Province	Children Not Living in Families in Age Group			
	Under 7		7-14	
	No.	P.C. of Total Children	No.	P.C. of Total Children
CANADA.....	8,046	0.52	31,218	1.77
Prince Edward Island.....	61	0.47	206	1.35
Nova Scotia.....	497	0.65	1,737	1.90
New Brunswick.....	378	0.55	1,190	1.22
Quebec.....	3,049	0.61	13,876	2.63
Ontario.....	2,706	0.62	7,303	1.40
Manitoba.....	387	0.40	1,741	1.41
Saskatchewan.....	178	0.12	1,808	1.01
Alberta.....	216	0.19	1,523	1.18
British Columbia.....	574	0.77	1,834	1.90

The Census of Population, from which the information thus far in this chapter comes, did not record separately the number of children in different types of institution. For data of this kind it is necessary to go to the Census of Institutions.* This volume records 19,643 children in residence at charitable and benevolent institutions, mainly orphanages and homes for adults and children, 7,085 in homes on wages agreement mainly under the care of juvenile immigration societies, 3,479 in free private homes without wages, and 2,300 in paid private boarding houses mainly under surveillance of children's aid societies, smaller numbers in other categories, making a grand total of about 35,000 children under the care of charitable and benevolent institutions outside of their own homes. About two-thirds of this number were under the age of 15 years. There were also 2,731 under the age of 15 in mental institutions, nearly 1,000 of this age in corrective and reformatory institutions, etc. While not equal to the total number of children recorded by the Census of Population as not living in families, these figures indicate where the greater number of such children are.

Orphanages, of course, account for many more than any other single category. From some of these the children go out to attend the ordinary publicly-controlled schools, while in others, school is conducted as a part of the orphanage's work. A record of the grades of children by age in the latter is available for comparison with similar records from public schools, and is given in Statement XIX.

*Published as Volume IX, Census of 1931. The data for this volume were obtained by questionnaires sent out in the mail to institutions, not by census enumerators and the compilations were independent of the population census.

XIX.—THE SCHOOL PROGRESS OF BOYS 7-14 YEARS OF AGE IN ORPHANAGES COMPARED WITH THAT OF BOYS IN ORDINARY SCHOOLS, BY SINGLE YEARS OF AGE, CANADA, 1931

Age	Average (median) Grade	
	Boys in Orphan-ages	Boys in Ordinary Schools
7.....	1-57	1-65
8.....	1-94	2-37
9.....	2-65	3-29
10.....	3-30	4-34
11.....	4-05	5-31
12.....	4-62	6-17
13.....	5-65	7-10
14.....	4-83	7-98

After an even start at the age of 7 there is a constantly widening gap in progress. The drop in average grade between the ages of 13 and 14 is apparently due to the brighter or more advanced children leaving the orphanages, for the numbers at the age of 14 are less than half of the number at 13. The number tends to be highest at about the age of 9.

CHAPTER V

YOUTHFUL DEPENDENCY RESULTING FROM DEFECTS, PHYSICAL, MENTAL AND SOCIAL

The discussion thus far has been concerned with the whole of the younger generation. Something should be recorded now about special kinds of dependency; handicaps which affect a relatively small number but which render them dependent to an exceptional degree or for an unusual length of time. In a general way the defects at back of these special cases are of three kinds, physical, mental and social, meaning by the last, delinquency and crime. No detailed examination of trends and causes will be attempted, for the purpose is not to analyse each of these special varieties of dependency but merely to indicate their importance in perspective. References will be made to the sources, publications of the Dominion Bureau of Statistics, in which persons particularly interested in any one of these special classes may find data for detailed study of them.

The Blind.—One of the most complete physical handicaps is blindness. It is not often an affliction of youth, as is indicated by the fact that among the 7,343 blind persons in Canada located by the Census of 1931 only 47 were under the age of 5, 132 of ages 5-9, 193 of ages 10-14, and 262 of ages 15-19. There were almost 1,000 more between the ages 20-40, the latter the age at which Dominion legislation of 1937 makes pensions available to the blind.

There has been little change in the number of blind children under the age of 10 since the beginning of the century—150 in 1901 and 1911, as compared with 137 in 1921 and 179 in 1931. At ages 10-19 the numbers have risen from 291 in 1901 to 381 in 1921 and to 455 in 1931, but even this rate of increase has been somewhat less than the percentage increase in young people at the age.

Of the total number of blind in 1931, 787 reported that they had been blind from birth; a further 431 that they were blind before the age of 5; 238 more that they became blind between 10 and 14, and 185 between 15 and 19.

For detailed tabular analyses of the blind population the reader is referred to *Bulletin No. XLIII of the Census of 1931*, in which is published a number of cross-classifications useful in studying their circumstances and background. Altogether 1,271 were reported as gainfully occupied, 95 of age 15-24, 514 of age 25-49, and 662 of 50 and over. About half of this number were on wages or salary, the average earnings in the case of men being between \$500 and \$600, and of women between \$300 and \$400. At ages 25-49, normally the best years of earning, only about 37 p.c. of the blind have an occupation, although more than two-thirds of them are men; this combined with the information on earnings, indicates the degree of dependency among the blind population.

There was a marked improvement in the literacy of the blind between 1921 and 1931—from 50 p.c. to 65 p.c. among all over the age of 15. The blind of school age are maintained in special schools for them at provincial expense. There are six such schools in Canada, all provincially supported, and the provinces which do not provide them pay for the maintenance of their blind children in the schools of a neighbouring province. A list of these schools and the enrolment in them is shown in the *Annual Survey of Education in Canada*.

In the larger cities of a majority of the provinces there are special classes in the public schools for children whose sight is very poor, the purpose being to conserve what vision they do possess. In Ontario the plan is carried into rural areas. A list of all such classes and their enrolment, amounting to about 300, is published in the *Annual Survey of Education in Canada*.

Deaf-Mutes.—Unlike the blind, deaf-mutes are usually afflicted from birth or very early years. Of the 6,767 recorded by the 1931 Census, 4,093 had been without the power of hearing and speech from birth, 1,907 more from earlier than the age of 5.

The number reported under the age of 10 in 1931 was 798, between 10 and 19 was 1,519, indicating that all cases were probably not identified among young children. The proportion of deaf-mutes in the population has been practically constant, just over 6 per 10,000, at each census since 1911.

The number reported as gainfully occupied was 316 at ages 15-24, 1,057 at ages 25-49 and 595 over 50 years, or 1,968 in all. The proportion gainfully occupied in the 25-49 group was higher than in the case of the blind; it was nearly 50 p.c., although a higher proportion were women than among the blind. Earnings averaged a little higher than for the blind, over \$600 for the men on wage or salary—but in neither case were they high enough to make the group independent as a whole. To put it in another way, the average deaf-mute child does not grow up to be self-supporting. About two-thirds at ages 25-49 are unmarried.

The proportion of deaf-mutes over the age of 15 who were able to read increased from 66 p.e. to 72 p.c. between 1921 and 1931. Education of deaf children, like education of the blind, is regarded as a special responsibility by provincial governments, and their schools for the deaf are attended by about 1400. A list of the schools and enrolment in them has a place in the *Annual Survey of Education in Canada*. This same publication includes a list of centres (confined to Ontario and British Columbia) where there are special classes in the ordinary schools for children who are hard-of-hearing. These enroll over 1,000 annually.

Detailed data on deaf-mutes are published in *Bulletin No. XLIV of the Census of 1931*.

Others Physically Handicapped.—Blindness and deaf-mutism are the only physical handicaps concerning which the census makes special inquiry, and little is known of the incidence of others. It is of interest to note, however, that in Ontario cities where special classes are conducted in the ordinary school systems for children with other serious physical defects, as well as for those with poor vision and hearing, the number of children involved is about the same for this miscellaneous group as for those with defective hearing. They include besides crippled and constitutionally weak children several classes in hospitals and sanatoria where children are confined for a considerable length of time.

In the five most westerly provinces and Nova Scotia there are correspondence courses available through the Departments of Education which may be taken by children incapacitated for actual school attendance, though the same courses are taken by normal children out of reach of a school, and there is no separate record of the number of invalids served.

Mental Cases.—In the decennial censuses from 1871 to 1911 the enumerators were asked to report as such all persons who were "mentally infirm" including those residing at home as well as in institutions. The obstacles to obtaining a complete record in this way must be obvious. The ratio of "mentally infirm" to total population varied in the five censuses from 23 to 31 in 10,000. As a part of the special Census of Institutions in 1931,* and annually since, the Dominion Bureau of Statistics has made analyses of the population in mental institutions, and has found that their ratio to the total population has increased annually from 29 per 10,000 in 1930 to 35 per 10,000 in 1935. The increase has been due mainly to the addition of new hospital accommodation, but it is also noticeable that more overcrowding in the hospitals has been reported in the more recent years of the 1930-35 period. It may also be significant of trend over a longer period that the proportion of the population in mental hospitals now is higher than the proportion represented by all the "mentally infirm" in and out of institutions, located by census enumerators a few decades ago.

Of the 31,172 inmates of mental institutions at the date of the 1931 Census, 183 had been admitted younger than the age of 5, 1,102 at ages 5-9, 1,446 at ages 10-14 and 2,023 at 15-19. The most common ages of admission were 25 to 39, when the number in each five-year group was almost double that at 15 to 19. From this it would appear likely that in

*The compilations from which constitute Volume IX, Census of 1931, in which data on mental institutions are given in detail. Similar data have since been published annually in a separate report.

addition to the approximate 2,700 under the age of 20 in mental institutions at the date of the census, a further 20,000 of this group, or thereabouts, would be admitted by the time they had replaced the 20-39 group in the population, i.e., in twenty years. In other words, the proportion of the population that comes under the care of a mental institution before middle life is something like double the 30 or 35 per 10,000 of the population actually in mental institutions at a given date.

Of those admitted to mental institutions at ages 10-14 over one-half are unable to read and write, one-third of those admitted at ages 15-19, one-fifth at ages 20-24, and smaller proportions as the ages advance, indicating different mental conditions as cause of admission at different ages. Almost half of the women in mental institutions (46.7 p.c.) are married or widowed, only 27.6 p.c. of the men.

There are six institutions for mentally defective children, as distinguished from institutions for adults, in Canada. A list of them showing capacity and attendance is published in the *Annual Survey of Education in Canada*, also a list of the centres in which special classes are maintained in the ordinary school systems for children who are mentally retarded or psychopathic. These special classes have a longer history in Ontario than elsewhere, and are more generally offered there (have even been organized in rural areas), but larger cities all the way across the Dominion are now conducting them. There are about 5,600 pupils in Ontario special classes of this kind, and some 2,500 in other provinces. The classes average at least one-third smaller than ordinary, as also in the case of special classes for children with physical defects, making them somewhat more costly, but at the same time a better investment, it is claimed, due to the more effective teaching that is possible.

Delinquents.—Delinquency has much the same significance in relation to juvenile behaviour as has crime in relation to adult conduct. Major and minor delinquencies have their later parallels in indictable and non-indictable criminal offences. A high proportion of criminals have early records of delinquency, so in considering the extent and trends of youthful misconduct it is well to remember its cumulative consequences in the adult population.

Delinquency is predominantly a problem of the larger cities and, to a lesser degree, the towns. In rural communities there is not the cities' variety of offences open to boys, and there is more useful work to occupy their spare time. Nearly half of the delinquency cases before Canadian courts are in three cities—Montreal, Toronto and Winnipeg—whose population is only about one-sixth of the Dominion total. Twelve of the larger cities, whose population is about one-fourth of the total, report between two-thirds and three-fourths of all delinquency cases. Offences are to the extent of more than 90 p.c. against property, more than 75 p.c. thefts or related acts.*

The annual number of convictions for major delinquencies in Canada has been over 5,000 since 1925, about 5 p.c. of cases being girls. Their percentage increase in post-War years has been somewhat more than the increase in population at the age, i.e., serious delinquencies have become relatively more prevalent, but at the same time they have not increased at nearly as fast a rate as adult crime. In the inter-censal period, 1921-31, convictions for serious adult (indictable) offences doubled, while convictions for serious juvenile offences (major delinquencies) increased only about 25 p.c.

Among the more than 5,000 juveniles convicted each year, about one-fourth have been before the court at least once before. Only about one-tenth are confined in a corrective or reformatory institution, but about half of them are obliged to remain under the supervision of the court.

The number under the age of 18 constituting a public charge to the extent of being confined to a corrective institution at the date of the 1931 Census was 1,715 boys and 638 girls. This was in addition to 106 boys and 3 girls in penitentiaries. For a study of the background and conditions of inmates there is Part IV of Volume IX of the Census of 1931, *Penitentiaries, Corrective and Reformatory Institutions*, and similar information for the year 1936 in preparation by the Institutions Branch of the Bureau.

*For statistics of delinquency the annual *Statistics of Criminal and Other Offences*, prepared by the Judicial Statistics Branch of the Dominion Bureau of Statistics, is the source.

CHAPTER VI

CONCLUDING NOTES

The preceding chapters have shown the extent to which the period of youthful dependency has lengthened, the cost of raising a child through this period, and have examined in particular the trends in that part of the cost which is met out of public funds, viz., the cost of schooling. From here they indicated briefly the situation of children dependent on others than their own parents, and of those who are dependent in a special way because of defects. It is time now to consider some of the changing relationships of the youth group as a whole to the adult world.

Ability of the Adult Population to Support Children Longer.—The long-term tendency in Canada, as in most other western countries, has been toward a smaller proportion of children in the total population. Statement XX is arranged to show the extent of this trend at each census date since 1881 in different sections of the country.

XX.—NUMBER OF PERSONS IN THE POPULATION UNDER THE AGE OF 16 FOR EACH 100 OF AGE 16 OR OLDER, CANADA AND REGIONAL DIVISIONS, 1881-1931

Census Year	Number under 16 per Hundred 16 and over				
	Canada	Western Provinces	Ontario	Quebec	Maritimes
1881.....	68	54	67	73	67
1891.....	61	36	58	71	62
1901.....	57	55	50	69	58
1911.....	53	48	45	68	57
1921.....	57	60	47	67	58
1931.....	51	68	42	60	56

There have been regional differences in trend, especially in the Western Provinces, due in large measure to changes in age distribution resulting from immigration, but in the Dominion as a whole, 1921 is the only year which does not conform and 1931 is lower than 1911. Yet the decline in proportion of children has not been nearly enough, in the present century at least, to offset the increasing number of years during which the average young person has to be considered economically as a child.

In Chapter I it was shown that children were independent at the age of 18 in 1931, at 17 in 1921, and at 16 in 1911. Taking into consideration this change, the proportion of children to adults is, in effect, not 57 per 100 in 1921 and 51 per 100 in 1931, but 75 and 65 respectively, as compared with 53 in 1911. Heavy immigration just before 1911 tended to make the proportion of children low in that year, but in 1901 it was only 57 to 100, and in 1891 only 61 to 100. Considering that children of these earlier decades were probably independent at earlier ages than in 1911, it seems very likely that the real ratio of dependent youth to adults was higher in 1921 and 1931 than it had ever been before, in spite of the superficial appearance of having fallen.

The proportion of children to adults may not, of course, be a reliable guide to the change in burden of child support. The productive capacity of the average adult may have increased, and probably has. A measure of the change in this respect will not be attempted; it will suffice here to notice that the average adult of recent years has been obliged to produce more goods and services on behalf of youth, even though the number of children at a given age, per adult, has been falling. It is a situation that is probably not without bearing on the steadily declining birth rate of recent years. A more constant figure than the annual number of births in recent years would be the number of births each year multiplied by the age at which the average youth of the year attained independence.

At the same time that the real ratio of youths to adults increases, the same thing is happening with the proportion of aged to working adults. In 1931 the proportion of persons over the age of 70 to persons of ages 16-69 was higher than it had ever been, and the prospect is a continued

increase. In their case the change in ratio is perhaps more directly significant, for the cost of their support to an increasing extent is being laid upon the whole population through the medium of Dominion taxation. Three-fourths of old age pensions are paid by the Dominion, and it appears that a majority of persons over 70 are now in receipt of pension. In the case of young persons support is mainly a family matter, and changes in the bare ratio of adults to them may come much shorter of indicating the whole story of change. Children may, for instance, be less or more evenly distributed among families than they used to be, but this phase of the change will not be examined here*. Let us recapitulate some of the effects on the position of the young people themselves.

The Position of Young People.—The adoption of old age pensions has been a practical recognition of increased dependency at the upper end of earning life, but there has been comparatively little done in Canada about the change at the lower end. There has been, of course, the general lengthening of schooling, described in Chapter I, and since the Technical Education Act of 1919 there has been a stimulus to diversity of instruction in the secondary schools, but even this has been a catering to lengthened boyhood or girlhood, rather than to earlier adulthood and independence. Some increase in the average length of schooling during recent decades has undoubtedly been permissible, or even desirable, but the tendency to keep the young people in the ordinary schools as boys and girls can hardly be allowed to go on indefinitely, as it seems inclined to do.

Expressing the situation the other way round, we may say from Chapter I that in the last twenty years Canadian industry has absorbed only the youth who have come of age in eighteen years, and in the last ten years only those who have come of age in nine years. In other words, it has come 10 p.c. short of absorbing the biological supply; the remaining 10 p.c. has remained in the schools. And in addition to those staying in school is the further large number who have fallen into idleness between school and their first job, or by reason of having made a mistaken or unfortunate start in employment. This latter number was shown to be large, even in comparatively normal years. In fact its most surprising feature is its relative constancy from one recent census to another, but as the age of leaving school becomes higher and higher, it represents a more and more serious problem. We have seen that independence is not now reached until young people are well on in their nineteenth year, and if the tendency of the last generation continues, they will in comparatively few years still be dependent on parents when reaching their twenties. The recent years of depression have served to focus attention on the situation, but the important point to recognize is that it is something much more than a passing phenomenon of a few difficult years.

There has been, and may yet be more, criticism of the cost of schools, but as Chapter III showed, the schools of recent years have, by any available measure, been giving as good or better value than before. Any increased expensiveness is more than accounted for by the increased work they have been called upon to do, especially in retaining children to older ages. And in any case, it appears from Chapter II, that criticism which confines itself to school costs is straining at a gnat while it uncomplainingly swallows a camel, for school costs constitute only about one-seventh of the total that is borne by society, in one way or another, when a child is raised to maturity. If any progress is to be made, it would appear that the problem of delayed productiveness of youth to which higher school costs are only incidental, must be attacked as a whole.

And it is something more than an economic problem. Delayed independence creates problems in the home, in the community, and in the lives of the individual boys and girls, that are only incidentally economic. They have received little space in these pages only because there is little of a statistical nature recorded concerning them.

Remedial Measures.—It is beyond the scope of this study to say what should be done about the lengthening dependency of youth. Our purpose is rather to show the problem in its real proportions, to set it in perspective. To suggest a solution would be to venture into the realm of controversy, for possible remedial measures are many and varied, and a choice among them depends in large measure upon one's particular philosophy. It would hardly be acceptable

*See the companion study *The Canadian Family* by A. J. Pelletier, F. D. Thompson and A. Roehon.

in Canada, for instance, to express a preference for compulsory military or labour service, such as have been adopted in some other countries to fill up the blank in the lives of young men. Nor is it in a study of this kind that judgment can be passed on such measures as obligatory shortening of the working week or retirement of older workers, restrictions on women's employment or on immigration, with a view to making room in Canadian industry for the rising generation of younger men.

There is another group of measures, however, developing in countries most closely akin to Canada, which contrast with those just mentioned inasmuch as they are based on volition rather than compulsion and are expansive rather than restrictive in nature and which may usefully be indicated in outline here by reason of their being still rather unfamiliar in Canada. The Dominion youth training programme inaugurated in 1937 belongs to this group.

The Department of Labour, which is responsible for administration of the Canadian youth training programme, classifies the projects being developed under it in four groups: (1) training projects of an occupational nature devised to increase the skill and employability of young people; (2) industrial learnership courses devised to provide theoretical training concurrent with employment; (3) work projects devised to conserve national resources, as well as train and recondition the young people participating; and (4) training projects of a physical nature to assist in the maintenance of health and morale. (British Columbia had a provincial scheme of the fourth kind in operation before the inauguration of the Dominion plan.) The aim is to provide in connection with all the projects, vocational guidance, recreation, and instruction in physical education. It is hoped by these means to make young persons more skilled and more fit, in this way facilitating their absorption into employment.

More or less kindred measures have been developed in the United States* under the Civilian Conservation Corps and the National Youth Administration. It is not yet clear whether these will become permanent institutions in the national life, but already nearly two million young men have participated in the C.C.C. Camps since they were first organized in 1933. The main types of work pursued by the 1,500-2,600 camps have been forest culture and protection in a program designed to return millions of acres to production, control of soil erosion in drought areas, flood control, irrigation, drainage, transportation improvement, wild-life conservation, structural improvement, range development and parks improvement. Educational activities constitute an important part of life in the camps. The appropriation for education in the C.C.C. Camps during the current fiscal year is five million dollars. Each camp (averaging about 200 young men) has about 2,600 square feet of floor space for class rooms, shops, library, reading room, and office of the educational supervisor. A wide variety of vocational as well as general educational courses is available in the different camps, and these as well as the interest and discipline developed by "training on the job" help to prepare the youths for positions in business and industry.

Through the National Youth Administration since 1935 part-time employment has been made available to needy students in order that they might complete their high school or college education, and part-time employment with a training value has been provided for out-of-school youth. Vocational guidance is given by means of pamphlets and individual or group conferences, and placement activities are conducted in co-operation with regular public employment services in some cities where the Administration provides a special officer to deal with the applications of persons under the age of 25. This last-mentioned service is of a kind that has been developed in Great Britain over a long period of years. It is more general there, and perhaps more effective, by reason of the unified national character of the employment service, or "unemployment exchanges".

The central feature of the British plan is special attention to boys and girls through the medium of the employment service. An outline of the practice may be indicated by quoting from *The Year Book of Education*, 1936†. "The unemployment exchange system, which is substantially unaltered after twenty-six years of operation, was set up to assist employers to find suitable workers. From its earliest days the labour exchange system included unemployed boys and girls within

*A valuable recent reference on the youth problem in the United States is the November, 1937, number of the *Annals of the American Academy of Political and Social Science* (3457 Walnut St., Philadelphia). It is almost entirely devoted to *The Prospect for Youth*, and includes two dozen separate articles.

†Published by Evans Bros., London, W.C. 1.

its scope, and special provision was made for Juvenile Advisory Committees to be set up in each important district, to guide boys and girls in the choice of employment." (In some centres separate employment bureaus for juveniles were set up by local education authorities, but in 1927 these were brought under the supervision of the Ministry of Labour along with the juvenile sections of the general employment offices, and, throughout, a local committee in each centre has co-operated with the Government.) "During the last twenty-five years the work of advising school-leavers, registering vacancies and placing boys and girls in situations has developed enormously. In most parts of the country boys and girls are now given information and advice on choice of vocation before they leave school, school record cards are almost universally in use, surveys of local vocational opportunities have been made and parents are invited to school conferences or rota committees to discuss their children's future prospects."

Britain is a place of much earlier industrialization than Canada, and it is just possible that there is something of value to be learned by Canada in her experience, for as Chapter I showed, the Canadian problem is one that has been gradually developing over a long period of years as industrialization has proceeded. When the older generation of to-day were young, and the great majority of our people lived on farms, schooling was essentially an isolated incident in the lives of children for which time had to be taken off in the winter months from the child's chief pursuit, which was helping on the parental farm. To-day with a town-dwelling majority, and schooling having become the dominating pursuit during ten years of the lives of young people, an abrupt break between school and vocation has come into existence. We have become predominantly wage-earners where we used to be a population of independent workers, children taking up life's business where fathers left off, with the result that there is seldom assurance that children will follow the occupation of their parents; and the latter's ability to guide or assist them in making the necessary adjustments for entering other fields is usually very limited. In short, the home and accidental contacts should perhaps no longer be relied upon to supply the need for vocational guidance in the industrialized society into which we have been growing. And if this is so for the child in ordinary circumstances, it must be doubly true of the numerous children under the special circumstances described in Chapters IV and V.

There is special provision in Britain, too, through the Ministry of Labour, for the young people who have made false starts in employment. Special instructional provision for them was made an integral part of the Unemployment Insurance Act in 1934, and "junior instruction centres" for them have since been obligatory throughout the country. At these centres are given "such courses of instruction as may be necessary for persons in their area between the minimum age for entry into insurance and the age of 18 years who are capable of and available for work but have no work or only part-time or intermittent work." The minimum age for entry into unemployment insurance is "the statutory school-leaving age," and the scheme being under the control of the Minister of Labour, not the Minister of Education, places the emphasis on reaching down from the level of employment and independence to help the young people up, rather than let them drop back as boys and girls again, into the separate world of graded schools, or out into complete idleness.

Vocational Guidance.—Various policies designed to facilitate the passage of youth between school and employment in Great Britain and other countries aim not only to insure that young people find jobs, but to see that they find those for which they are best fitted by individual characteristics and training. Even with to-day's shorter working week a person's occupation usually engages the greater part of his waking hours, and he is an unfortunate drudge who finds nothing of value but his pay cheque in more than half of his life. Unless he is more than an ordinarily faithful servant, neither will his employer's best interests be served. So in older countries there have arisen institutes to examine the abilities, aptitudes and interests of young people, to advise them and their parents as to what types of work each child seems most suited for, and to help employers find the young people best fitted for the jobs they have to offer. Like tests of general intelligence, examinations of this kind have their limitations, but employers have attested their faith in them by paying for their scientific development and application.

Another phase of guidance is to acquaint parents and children with the nature of different occupations so they may more intelligently choose for themselves. Most of this work is done through the schools, and with the assistance or co-operation of government employment services,

as has already been mentioned in the case of England. Guidance of this kind starts early in the child's life, while he is still in the elementary school, so that in choosing which secondary school to attend he will not pick the technical school because it has distinguished itself in his estimation by winning, say, the intercollegiate football championship, or the academic high school because of a similar situation in hockey. We are assured by city secondary school principals that reasons of no greater logic than these are not infrequently the determining factor in deciding a child's further schooling and thus his future life, and that by adequate attention to inter-school records in athletics a particular school may increase its enrolment by a substantial percentage in a single year.

A few schools and school boards in Canada are pioneering in this field of vocational guidance, but no program on a scale as wide as provincial has yet been developed in any province. These pioneering activities may be portents of a coming practice which will help to close the gap that has developed between school and industry, and at the same time make for happier as well as more efficient working lives. The latter consideration is of more than secondary importance, for the very essence of democracy is in its assumption of worth in individual men and women; and they will be more likely to achieve this assumed value, both to themselves and to society, if they have the fullest opportunity for the development of their best but differing potentialities. This can only happen when, as nearly as can be, each youth enters the vocation best suited to his capabilities.

PART II

TABLE 1. Population 10 years of age and over, gainfully occupied and wage-earning populations, number of wage-earners stating earnings and average earnings per wage-earner stating earnings, by age group and sex, Canada, 1911-1931

No.	Age Group	Population			Gainfully Occupied		
		1911	1921	1931	1911 ¹	1921	1931
CANADA—							
1	Males.....	2,952,044	3,456,195	4,255,431	2,358,813	2,683,019	3,258,614
2	10-19.....	706,155	864,579	1,068,180	638,348	302,895	325,775
3	20-24.....	385,855	350,984	463,722		324,102	428,558
4	25-64.....	1,690,429	2,026,265	2,429,152	1,619,885	1,930,853	2,340,480
5	65 and over.....	169,605	214,367	294,377	100,580	125,167	163,821
6	Females.....	2,547,181	3,204,600	3,909,700	364,821	490,150	665,919
7	10-19.....	674,530	850,388	1,045,462	187,769	116,929	133,559
8	20-24.....	320,435	300,227	447,463		126,226	189,346
9	25-64.....	1,388,058	1,789,245	2,135,321	168,034	234,257	325,589
10	65 and over.....	164,158	204,740	281,454	9,018	12,738	17,425
Prince Edward Island—							
11	Males.....	36,802	35,040	35,903	27,950	27,052	27,815
12	10-19.....	10,849	9,289	9,422	7,600	3,346	3,427
13	20-24.....	3,955	3,520	3,866		3,300	3,003
14	25-64.....	18,215	17,863	18,190	17,579	17,220	17,583
15	65 and over.....	3,783	4,368	4,425	2,777	3,180	3,202
16	Females.....	36,772	34,169	33,423	3,950	4,054	4,353
17	10-19.....	10,250	8,816	8,887	1,829	897	983
18	20-24.....	4,131	3,512	3,194		1,141	1,087
19	25-64.....	18,350	17,707	17,057	1,857	1,758	1,985
20	65 and over.....	4,041	4,134	4,285	264	258	318
Nova Scotia—							
21	Males.....	192,491	205,303	267,022	148,991	156,777	153,139
22	10-19.....	51,007	55,239	56,044	38,743	17,658	15,100
23	20-24.....	22,076	21,520	22,817		19,762	20,755
24	25-64.....	101,203	109,983	108,012	97,706	106,522	103,709
25	65 and over.....	17,515	18,562	20,149	12,542	12,835	13,485
26	Females.....	184,592	197,846	195,265	24,370	28,778	27,944
27	10-19.....	50,172	53,885	53,793	12,343	6,820	5,807
28	20-24.....	21,443	22,261	20,404		7,975	7,553
29	25-64.....	94,491	102,372	100,578	10,973	12,662	13,235
30	65 and over.....	18,486	19,328	20,490	1,054	1,322	1,349
New Brunswick—							
31	Males.....	135,632	148,725	159,059	103,276	112,944	117,949
32	10-19.....	38,388	41,849	45,699	27,465	14,019	14,335
33	20-24.....	15,382	15,895	17,625		14,820	19,174
34	25-64.....	70,849	78,727	81,757	65,443	76,080	78,785
35	65 and over.....	11,053	12,263	13,974	7,367	8,016	8,655
36	Females.....	129,232	142,845	151,193	16,491	19,864	22,074
37	10-19.....	36,405	40,938	43,958	8,311	4,740	4,703
38	20-24.....	15,553	16,441	16,769		5,409	6,320
39	25-64.....	68,652	73,765	77,107	7,578	8,955	10,189
40	65 and over.....	10,622	11,701	13,359	602	674	798
Quebec—							
41	Males.....	733,214	863,214	1,091,061	552,140	646,440	820,250
42	10-19.....	212,145	257,362	305,688	165,029	98,971	103,900
43	20-24.....	90,985	97,868	130,733		80,684	119,908
44	25-64.....	384,402	453,928	586,119	363,117	429,409	562,354
45	65 and over.....	45,692	54,066	68,521	23,994	28,295	34,088
46	Females.....	717,474	864,706	1,075,800	101,101	139,151	202,489
47	10-19.....	210,567	260,247	309,979	52,866	36,799	45,483
48	20-24.....	91,416	104,549	136,383		34,649	56,495
49	25-64.....	369,641	445,722	550,767	45,483	63,475	95,400
50	65 and over.....	45,850	54,188	60,677	2,772	4,231	5,045
Ontario—							
51	Males.....	1,039,410	1,170,868	1,423,474	836,138	923,413	1,096,980
52	10-19.....	241,499	277,129	324,938	218,796	94,270	93,717
53	20-24.....	127,008	116,080	147,060		107,729	135,923
54	25-64.....	598,400	701,714	835,924	575,794	670,900	805,090
55	65 and over.....	71,610	85,948	114,943	41,545	50,514	62,249
56	Females.....	973,837	1,149,037	1,366,727	154,878	195,100	249,439
57	10-19.....	231,823	262,857	312,207	79,872	44,550	45,449
58	20-24.....	118,342	123,382	149,512		49,779	67,710
59	25-64.....	652,982	676,815	791,857	71,481	95,995	129,586
60	65 and over.....	70,690	85,983	119,151	3,525	4,805	6,694

¹ In 1911 no compilation was made of wage-earners under 15 years of age. Substitute 15 wherever 10 years of age is stated for 1911 figures. Also, no attempt was made to divide into age groups those wage-earners whose earnings were not stated, hence total number of wage-earners for that year can not be shown by age groups.

TABLE 1. Population 10 years of age and over, gainfully occupied and wage-earning populations, number of wage-earners stating earnings and average earnings per wage-earner stating earnings, by age group and sex, Canada, 1911-1931.

Wage-Earners			Wage-Earners Stating Earnings			Average Earnings of Wage-Earners Stating Earnings			Sex
1911 ^a	1921	1931	1911 ^a	1921	1931	1911 ^a	1921	1931	
1,328,330	1,545,894	2,022,260	1,121,920	1,459,127	1,947,957	\$ 593	\$ 1,057	\$ 927	1
.....	183,825	183,201	.....	169,687	175,601	.....	547	343	2
.....	220,769	308,351	.....	207,649	297,508	.....	846	613	3
.....	1,091,194	1,468,073	.....	1,036,548	1,415,909	.....	1,190	1,067	4
.....	50,109	62,035	.....	45,243	58,882	.....	881	860	5
299,943	426,195	547,837	242,745	394,279	528,457	313	573	559	6
.....	115,711	125,445	.....	110,057	120,858	.....	418	327	7
.....	120,232	174,474	.....	114,327	166,533	.....	622	533	8
.....	183,910	241,892	.....	97,743	232,590	.....	649	715	9
.....	6,342	6,020	.....	4,550	5,376	.....	340	406	10
7,227	8,125	9,159	5,388	7,190	8,580	378	657	679	11
.....	1,381	1,368	.....	1,218	1,276	.....	314	289	12
.....	1,418	1,821	.....	1,256	1,713	.....	480	480	13
.....	4,802	5,480	.....	4,257	5,159	.....	440	844	14
.....	524	492	.....	459	452	.....	215	636	15
2,785	3,249	3,185	1,925	2,952	3,000	209	334	364	16
.....	888	929	.....	838	864	.....	191	245	17
.....	1,038	1,003	.....	969	953	.....	361	363	18
.....	1,214	1,194	.....	1,058	1,128	.....	237	385	19
.....	109	50	.....	87	55	.....	186	232	20
82,779	93,314	95,244	71,340	88,690	91,229	481	890	762	21
.....	12,849	9,659	.....	11,869	9,142	.....	507	331	22
.....	14,969	15,944	.....	14,271	15,242	.....	746	539	23
.....	61,652	65,491	.....	59,093	62,964	.....	1,010	883	24
.....	3,844	4,153	.....	3,460	3,881	.....	739	692	25
19,459	24,770	22,537	15,366	22,957	21,462	232	423	431	26
.....	6,772	5,471	.....	6,401	5,167	.....	300	250	27
.....	7,749	6,934	.....	7,395	6,701	.....	447	410	28
.....	9,647	9,657	.....	8,692	9,174	.....	501	554	29
.....	605	475	.....	469	420	.....	262	350	30
55,152	63,213	66,310	49,187	60,006	64,137	435	873	755	31
.....	8,660	7,169	.....	8,129	6,865	.....	479	284	32
.....	10,009	11,404	.....	10,090	11,025	.....	713	479	33
.....	41,336	45,085	.....	39,419	43,731	.....	1,010	901	34
.....	2,608	2,654	.....	1,662	2,370	.....	736	706	35
13,026	17,099	17,922	11,354	15,973	17,359	236	455	437	36
.....	4,703	4,439	.....	4,474	4,287	.....	329	235	37
.....	5,295	5,769	.....	5,085	5,643	.....	477	419	38
.....	6,805	7,443	.....	6,188	7,199	.....	530	578	39
.....	293	273	.....	228	247	.....	294	315	40
309,922	386,969	535,203	275,617	359,097	515,359	563	1,030	925	41
.....	56,494	57,895	.....	51,184	55,682	.....	541	348	42
.....	61,210	86,527	.....	56,290	83,498	.....	859	680	43
.....	256,296	375,723	.....	239,980	362,021	.....	1,153	1,083	44
.....	12,969	15,058	.....	7,215	11,636	.....	860	886	45
84,064	117,780	161,130	65,950	105,509	155,457	299	480	478	46
.....	36,138	42,788	.....	34,226	41,427	.....	247	306	47
.....	32,462	51,040	.....	30,159	49,545	.....	517	460	48
.....	46,990	65,763	.....	39,682	63,104	.....	566	607	49
.....	2,105	1,555	.....	1,442	1,381	.....	331	364	50
499,570	586,123	752,851	440,776	559,918	728,483	582	1,102	1,005	51
.....	65,490	63,645	.....	61,793	61,177	.....	551	374	52
.....	79,121	108,850	.....	75,377	105,357	.....	888	663	53
.....	418,852	553,889	.....	401,953	536,974	.....	1,234	1,146	54
.....	22,662	26,461	.....	20,793	24,975	.....	929	932	55
128,493	173,127	212,750	110,565	162,750	205,904	309	613	636	56
.....	44,283	43,351	.....	42,471	41,988	.....	462	382	57
.....	47,297	63,230	.....	45,256	61,608	.....	676	600	58
.....	79,025	103,420	.....	73,139	99,834	.....	667	768	59
.....	2,829	2,755	.....	1,884	2,474	.....	360	431	60

TABLE 1: Population 10 years of age and over, gainfully occupied and wage-earning populations, number of wage-earners stating earnings and average earnings per wage-earner stating earnings, by age group and sex, Canada, 1911-1931—Con.

No.	Age Group	Population			Gainfully Occupied		
		1911	1921	1931	1911 ¹	1921	1931
Manitoba—							
1	Males.....	191,917	240,270	298,019	155,900	184,961	225,768
2	10-19.....	44,327	60,986	77,625	43,553	19,57	22,944
3	20-24.....	28,410	23,955	32,687		22,188	30,205
4	25-64.....	113,125	144,952	168,363	108,962	137,403	163,043
5	65 and over.....	6,049	10,377	19,341	3,385	5,791	9,576
6	Females.....	150,153	211,232	271,640	22,200	31,682	44,922
7	10-19.....	42,292	59,473	75,897	12,407	7,609	9,178
8	20-24.....	21,504	23,930	31,672		8,411	14,334
9	25-64.....	81,393	119,234	159,815	9,555	15,237	20,614
10	65 and over.....	4,964	8,595	24,265	244	425	796
Saskatchewan—							
11	Males.....	224,149	301,988	389,977	195,247	242,116	301,418
12	10-19.....	44,251	74,293	107,263	55,898	25,642	33,637
13	20-24.....	37,990	29,913	43,967		28,499	41,769
14	25-64.....	136,917	187,933	221,061	135,882	181,098	215,515
15	65 and over.....	4,991	9,849	17,680	3,497	5,877	10,497
16	Females.....	138,199	235,109	315,184	13,275	24,859	37,505
17	10-19.....	38,577	70,143	103,809	6,938	5,968	7,553
18	20-24.....	19,813	27,068	37,928		6,672	12,499
19	25-64.....	76,338	130,619	160,125	6,111	11,850	16,584
20	65 and over.....	3,471	7,279	13,325	226	389	869
Alberta—							
21	Males.....	174,854	245,569	319,757	149,687	135,102	252,793
22	10-19.....	33,727	55,637	78,135		16,748	22,287
23	20-24.....	28,028	23,672	34,701	39,850	22,035	32,966
24	25-64.....	109,542	158,187	192,069	107,374	151,807	187,889
25	65 and over.....	3,557	8,073	14,852	2,454	4,512	9,651
26	Females.....	106,439	187,912	256,254	11,923	21,142	33,425
27	10-19.....	29,596	52,273	75,500		4,433	6,094
28	20-24.....	14,212	21,079	30,397	5,950	5,583	10,780
29	25-64.....	60,162	108,857	135,553	5,825	10,795	15,837
30	65 and over.....	2,469	5,714	10,804	148	331	714
British Columbia—							
31	Males.....	215,868	240,448	327,430	189,482	194,214	262,508
32	10-19.....	38,478	41,927	61,985	41,435	11,662	16,338
33	20-24.....	30,461	18,154	29,055		16,085	27,235
34	25-64.....	151,705	169,728	214,534	145,028	160,326	206,511
35	65 and over.....	5,224	10,639	22,056	3,019	6,141	12,418
36	Females.....	107,242	179,193	253,995	16,627	25,513	43,768
37	10-19.....	24,145	40,990	60,184	7,253	5,136	8,209
38	20-24.....	13,692	17,747	26,742		6,524	12,562
39	25-64.....	66,012	112,734	151,113	9,191	13,550	22,093
40	65 and over.....	3,393	7,710	15,956	183	303	844

TABLE 1. Population 10 years of age and over, gainfully occupied and wage-earning populations, number of wage-earners stating earnings and average earnings per wage-earner stating earnings, by age group and sex, Canada, 1911-1931—Con.

Wage-Earners			Wage-Earners Stating Wages			Average Earnings of Wage-Earners Stating Wages			No
1911 ¹	1921	1931	1911 ¹	1921	1931	1911 ¹	1921	1931	
91,427	99,756	132,883	70,107	94,470	128,382	\$ 706	\$ 1,162	\$ 929	1
.....	10,647	11,191	22,021	9,567	10,710	514	562	315	2
.....	13,621	20,212	.....	12,874	19,526	.....	851	550	3
.....	73,495	98,122	47,440	70,263	95,018	796	1,304	1,077	4
.....	1,993	3,358	646	1,772	3,128	663	1,016	909	5
19,095	28,341	37,856	14,676	26,673	36,568	398	693	559	6
.....	7,555	8,655	.....	7,211	8,278	.....	498	276	7
.....	8,184	13,453	8,914	7,877	13,096	368	736	509	8
.....	12,425	15,334	5,710	11,456	15,001	447	788	758	9
.....	177	214	52	129	190	313	1,016	446	10
70,454	82,677	116,157	44,845	76,492	111,099	636	1,030	761	11
.....	10,143	10,790	.....	9,005	10,207	.....	532	264	12
.....	14,185	21,449	16,146	13,126	20,809	493	780	458	13
.....	57,233	81,998	28,507	53,457	78,523	718	1,178	906	14
.....	1,116	1,920	192	924	1,760	588	815	701	15
10,229	21,313	29,411	6,299	19,623	27,959	387	663	524	16
.....	5,881	6,748	3,898	5,472	6,323	366	474	254	17
.....	6,466	11,467	.....	6,155	11,081	.....	759	535	18
.....	8,827	10,990	2,379	7,808	10,398	423	717	680	19
.....	139	186	22	98	150	295	343	346	20
66,450	84,525	116,005	46,221	79,157	112,481	707	1,143	890	21
.....	8,172	8,237	14,586	7,581	7,905	557	603	345	22
.....	11,919	18,508	.....	11,292	17,967	.....	845	565	23
.....	63,204	86,946	31,412	59,241	84,415	778	1,271	1,012	24
.....	1,230	2,315	223	1,043	2,104	726	996	842	25
9,270	18,205	26,416	6,495	16,881	25,462	405	701	569	26
.....	4,384	5,370	.....	4,125	5,155	.....	499	329	27
.....	5,434	9,837	3,903	5,235	9,582	368	759	582	28
.....	8,250	578	2,572	7,432	10,560	462	774	749	29
.....	137	174	20	89	159	330	428	412	30
145,342	141,190	198,448	118,439	134,101	188,207	717	1,048	897	31
.....	9,989	13,252	27,260	9,345	12,667	611	599	397	32
.....	13,714	23,627	.....	13,079	22,571	.....	854	674	33
.....	114,324	155,345	90,090	108,897	147,121	750	1,114	980	34
.....	3,163	6,224	1,083	2,786	5,818	655	870	714	35
13,532	22,308	36,618	10,115	20,961	35,292	445	676	623	36
.....	5,107	7,704	.....	4,869	7,386	.....	492	342	37
.....	6,310	11,721	5,101	6,099	11,424	426	724	608	38
.....	10,727	16,858	4,954	9,872	16,188	465	570	757	39
.....	164	335	60	124	291	250	443	420	40

TABLE 2. Population 5-24 years of age and percentages attending school, by single years of age, Canada, 1911-1931

Age	1911		1921		1931	
	No. at Age	P.C. at School	No. at Age	P.C. at School	No. at Age	P.C. at School
CANADA—						
5-24 years	2,866,524	40-24	3,471,744	49-27	4,152,175	51-89
5 "	164,388	14-00	215,572	14-06	222,257	11-29
6 "	160,961	44-54	217,551	51-85	226,080	53-13
7 "	158,492	72-24	212,413	81-94	225,364	86-97
8 "	154,297	82-18	208,083	90-64	228,481	94-45
9 "	143,918	85-85	194,045	93-12	228,850	96-15
6-9 "	617,668	70-68	832,122	78-88	808,787	82-74
10 "	148,243	86-29	194,229	94-09	231,834	97-09
11 "	135,112	86-96	179,487	94-31	218,283	97-18
12 "	140,964	83-99	187,773	92-74	211,698	96-12
13 "	134,468	77-81	175,043	88-07	203,240	92-77
14 "	140,776	63-32	175,773	73-39	207,504	83-33
10-14 "	699,565	79-70	912,508	88-71	1,072,647	95-44
15 "	135,187	42-38	163,871	51-29	204,906	66-87
16 "	137,119	24-79	168,439	32-53	215,532	45-98
17 "	133,894	14-10	159,925	19-59	210,297	28-49
18 "	141,238	7-72	161,860	11-23	210,667	16-62
19 "	132,160	4-53	146,998	6-86	196,961	9-63
15-19 "	679,898	18-69	801,009	24-79	1,082,569	35-67
20-24 "	705,307	1-33	710,652	2-27	910,121	2-83
Prince Edward Island—						
5-24 years	39,349	44-84	34,833	48-94	34,929	52-11
5 "	1,955	10-69	2,013	12-22	1,883	9-61
6 "	2,111	39-63	1,959	44-94	1,891	53-94
7 "	2,041	70-90	1,968	76-58	1,864	84-82
8 "	2,074	83-41	1,937	85-69	1,968	95-07
9 "	1,983	88-78	1,869	92-88	1,954	97-03
6-9 "	8,809	70-84	7,735	75-53	7,677	82-56
10 "	2,142	90-94	1,892	93-87	1,908	97-80
11 "	2,048	92-29	1,763	94-05	1,914	97-60
12 "	2,030	89-77	1,925	92-88	1,944	96-40
13 "	2,048	86-47	1,844	88-34	1,796	94-77
14 "	2,107	74-69	1,951	78-22	1,843	83-88
10-14 "	10,518	89-71	9,395	89-57	8,406	94-16
15 "	2,126	57-38	1,770	58-81	1,704	62-07
16 "	2,272	29-62	1,859	39-32	1,789	39-53
17 "	2,192	15-60	1,791	20-19	1,858	23-04
18 "	2,111	6-35	1,694	10-15	1,811	12-31
19 "	1,880	3-72	1,596	6-70	1,685	8-43
15-19 "	10,581	23-06	8,710	27-69	8,504	29-13
20-24 "	8,086	1-27	7,032	2-40	7,060	2-80
Nova Scotia—						
5-24 years	291,039	44-53	212,771	49-04	210,244	54-59
5 "	11,559	15-76	12,096	14-49	11,266	19-71
6 "	11,491	48-54	12,091	48-61	11,425	62-05
7 "	11,328	74-78	12,188	76-75	11,293	85-82
8 "	10,961	83-91	12,022	87-51	11,461	93-74
9 "	10,332	87-40	11,471	90-77	11,741	96-24
6-9 "	44,118	73-16	47,770	75-70	45,980	84-55
10 "	10,765	88-64	11,856	92-32	12,045	97-15
11 "	9,904	89-43	10,950	93-24	11,563	97-35
12 "	10,445	86-62	11,792	91-53	11,404	96-77
13 "	9,963	82-11	11,199	88-49	10,598	94-65
14 "	10,609	70-78	11,471	78-44	10,928	86-91
10-14 "	51,746	83-46	57,268	88-80	56,538	94-67
15 "	10,114	51-74	10,413	59-31	10,543	71-75
16 "	10,462	30-99	11,183	37-25	11,002	48-75
17 "	10,010	16-68	10,498	21-58	10,979	30-29
18 "	10,127	9-50	10,438	12-23	10,837	16-62
19 "	9,380	5-48	9,311	7-09	9,938	9-08

TABLE 2. Population 5-24 years of age and percentages attending school, by single years of age, Canada, 1911-1931—Con.

Age	1911		1921		1931	
	No. at Age	P.C. at School	No. at Age	P.C. at School	No. at Age	P.C. at School
Nova Scotia—Con.						
15-19 years.....	50,185	23.80	51,869	28.08	53,299	36.67
20-24 ".....	43,519	1.39	43,781	2.36	43,221	2.89
New Brunswick—						
5-24 years.....	146,975	42.67	162,067	45.62	174,368	51.06
5 ".....	8,474	6.73	9,608	6.68	9,967	4.36
6 ".....	8,424	35.66	9,640	38.17	10,113	44.81
7 ".....	8,377	65.99	9,471	72.40	9,806	83.81
8 ".....	8,301	80.10	9,435	83.97	10,239	91.85
9 ".....	7,671	84.88	8,799	88.24	10,202	94.23
6-9 ".....	38,773	66.19	37,546	70.22	40,360	78.69
10 ".....	7,986	87.01	8,989	89.59	10,147	95.75
11 ".....	7,485	87.51	8,626	89.64	9,531	95.61
12 ".....	7,643	85.58	9,064	88.50	9,283	94.55
13 ".....	7,379	81.39	8,566	83.38	8,999	89.68
14 ".....	7,746	69.27	8,531	70.62	8,848	77.51
10-14 ".....	38,239	82.16	43,776	84.46	48,808	90.86
15 ".....	7,417	52.96	7,882	52.47	8,688	60.62
16 ".....	7,583	30.99	8,218	33.16	8,822	42.61
17 ".....	7,322	18.12	7,725	18.90	8,760	27.11
18 ".....	7,627	9.11	8,049	9.67	8,548	15.63
19 ".....	6,705	4.94	7,128	6.00	8,022	8.70
15-19 ".....	36,554	23.69	39,008	24.45	42,843	31.26
20-24 ".....	30,935	1.35	32,336	1.74	34,394	2.68
Quebec—						
5-24 years.....	862,172	42.68	1,026,817	47.76	1,236,626	47.53
5 ".....	54,120	18.78	63,104	18.23	71,851	10.07
6 ".....	52,735	49.52	62,421	54.97	71,861	47.32
7 ".....	52,175	76.32	62,280	83.19	70,551	84.06
8 ".....	50,551	86.63	61,504	91.82	70,397	93.74
9 ".....	47,478	90.06	57,422	94.10	69,183	96.49
6-9 ".....	202,939	75.15	248,687	80.71	281,928	79.28
10 ".....	47,525	90.20	57,739	94.89	67,785	96.52
11 ".....	43,178	89.62	54,437	94.20	63,691	96.40
12 ".....	44,964	84.55	55,955	90.76	61,987	93.71
13 ".....	43,370	73.56	53,102	81.03	61,825	85.55
14 ".....	43,310	54.53	53,378	60.71	60,851	67.73
10-14 ".....	222,547	78.76	274,611	84.68	318,809	88.29
15 ".....	42,069	31.28	50,615	39.44	59,537	48.77
16 ".....	41,466	17.57	51,237	24.66	61,681	32.17
17 ".....	39,878	10.46	48,891	15.03	60,309	19.72
18 ".....	40,258	5.45	48,321	8.10	61,425	10.69
19 ".....	36,694	3.23	43,934	4.86	56,907	6.04
15-19 ".....	200,366	15.97	248,208	18.93	292,868	25.60
20-24 ".....	182,401	1.22	202,417	1.91	267,116	2.11
Ontario—						
5-24 years.....	963,367	41.84	1,077,066	50.26	1,261,268	54.40
5 ".....	50,089	15.09	62,845	18.40	64,577	18.16
6 ".....	49,477	49.83	63,571	59.94	66,393	64.67
7 ".....	49,410	78.55	62,327	85.99	66,906	90.86
8 ".....	48,836	86.79	61,420	92.85	67,679	95.84
9 ".....	45,988	89.37	57,458	94.68	67,387	97.25
6-9 ".....	193,717	76.89	244,776	82.98	298,586	87.24
10 ".....	48,076	89.75	57,962	95.48	69,825	97.97
11 ".....	44,609	90.09	54,163	95.73	65,240	98.22
12 ".....	46,743	88.27	57,008	95.31	62,554	97.71
13 ".....	45,197	83.56	53,152	92.93	59,053	96.72
14 ".....	48,848	68.38	53,267	78.70	61,585	90.40
10-14 ".....	233,484	83.84	274,561	91.76	318,267	96.27

TABLE 2. Population 5-24 years of age and percentages attending school, by single years of age, Canada, 1911-1931—Con.

Age	1911		1921		1931	
	No. at Age	P.C. at School	No. at Age	P.C. at School	No. at Age	P.C. at School
Ontario—Con.						
15 years	46,096	45.75	50,794	53.79	61,236	77.04
16 "	48,230	26.53	53,051	33.80	66,301	53.34
17 "	47,440	15.07	50,836	20.98	64,744	31.84
18 "	49,706	9.08	52,298	13.06	65,052	19.57
19 "	47,479	5.67	47,452	8.59	61,555	11.88
15-19 "	239,851	20.29	254,491	20.27	318,888	38.64
20-24 "	246,250	1.70	239,462	2.92	291,181	3.65
Manitoba—						
5-24 years	187,966	36.54	248,545	50.87	293,615	52.60
5 "	11,233	7.45	16,461	6.62	14,255	6.20
6 "	11,065	34.01	17,141	48.29	14,787	54.32
7 "	10,373	62.78	16,163	79.98	15,067	87.88
8 "	9,803	73.63	15,838	89.63	15,810	94.57
9 "	8,973	78.86	14,598	92.75	15,809	96.43
9-9 "	40,214	61.11	63,740	76.78	61,479	83.73
10 "	9,427	78.26	14,403	94.27	16,285	96.99
11 "	8,299	81.62	12,919	94.90	15,142	97.27
12 "	8,807	78.88	13,590	93.80	15,328	96.94
13 "	8,274	76.58	12,549	91.43	14,375	95.82
14 "	8,580	66.48	12,547	79.48	15,357	87.32
10-14 "	43,403	76.56	60,008	90.94	76,487	94.87
15 "	8,420	48.85	11,234	58.55	15,197	69.81
16 "	8,480	30.61	11,565	37.66	15,907	50.54
17 "	8,467	17.59	10,784	22.15	15,418	31.24
18 "	9,373	9.42	10,991	12.39	15,560	17.87
19 "	8,476	4.98	9,877	7.23	14,933	9.86
15-19 "	43,216	21.69	64,451	28.28	77,056	35.88
20-24 "	49,920	1.27	47,885	2.06	64,359	2.79
Saskatchewan—						
5-24 years	194,357	30.71	307,867	49.81	404,173	53.42
5 "	12,053	8.35	22,748	9.11	21,594	5.05
6 "	11,417	31.30	22,814	43.86	22,036	44.07
7 "	10,862	63.92	21,399	78.37	22,066	85.33
8 "	10,220	65.65	20,486	88.72	22,259	94.62
9 "	9,194	71.45	19,003	91.81	23,204	95.94
9-9 "	41,693	54.47	89,708	74.45	89,616	80.22
10 "	9,563	71.09	18,341	92.80	23,394	96.88
11 "	8,262	74.96	15,838	93.82	22,421	97.09
12 "	8,591	72.33	16,820	92.87	21,985	96.95
13 "	7,636	68.66	14,813	90.62	21,096	96.28
14 "	8,098	57.73	15,342	75.69	21,140	91.99
10-14 "	42,160	69.29	81,154	89.58	110,036	95.88
15 "	7,362	40.33	13,218	51.79	20,780	68.59
16 "	7,591	23.75	13,351	32.89	21,343	45.05
17 "	7,565	11.80	12,480	18.88	20,614	28.99
18 "	9,218	5.90	12,592	10.17	19,841	17.82
19 "	8,922	2.60	11,641	5.70	18,455	10.70
15-19 "	40,658	1.68	63,287	24.66	101,035	34.99
20-24 "	57,803	0.60	56,981	1.40	81,895	2.31
Alberta—						
5-24 years	145,073	30.23	228,484	50.15	299,537	53.87
5 "	8,622	6.60	16,036	5.63	15,743	3.24
6 "	8,300	26.95	16,449	38.38	16,105	29.30
7 "	8,032	51.46	15,561	77.04	16,020	86.06
8 "	7,620	61.05	14,457	87.88	16,497	94.01
9 "	6,930	65.22	13,336	90.80	16,739	95.73
9-9 "	39,886	50.55	69,794	72.10	65,361	79.02
10 "	7,232	67.52	13,273	92.37	17,216	97.07
11 "	6,396	69.14	11,661	93.08	16,321	97.30

TABLE 2. Population 5-24 years of age and percentages attending school, by single years of age, Canada, 1911-1931—Con.

Age	1911		1921		1931	
	No. at Age	P.C. at School	No. at Age	P.C. at School	No. at Age	P.C. at School
Alberta—Con.						
12 years.....	6,599	68.01	12,227	92.70	15,807	97.46
13 ".....	5,959	65.83	11,379	91.34	14,908	96.81
14 ".....	6,254	57.10	10,711	86.85	15,234	94.00
10-14 ".....	32,540	65.61	69,831	91.38	79,484	96.66
15 ".....	5,817	46.47	10,179	66.91	15,060	77.23
16 ".....	5,980	27.99	10,130	43.78	15,688	54.85
17 ".....	5,743	16.40	9,505	25.04	15,007	37.26
18 ".....	6,900	7.38	9,827	13.32	14,748	22.42
19 ".....	6,543	4.10	9,018	7.71	13,642	12.23
15-19 ".....	50,983	19.64	48,639	32.12	74,161	41.66
20-24 ".....	42,240	1.01	44,744	1.89	65,068	2.76
British Columbia—						
5-24 years.....	126,186	31.99	173,060	51.56	237,115	53.56
5 ".....	6,287	5.01	10,601	5.04	11,131	5.42
6 ".....	5,941	32.45	11,504	46.65	11,425	56.95
7 ".....	5,888	66.39	11,056	83.62	11,791	89.55
8 ".....	5,931	75.45	10,984	89.80	12,165	93.74
9 ".....	5,363	78.86	10,089	91.98	12,637	95.81
0-9 ".....	35,183	68.89	45,636	77.57	48,016	84.30
10 ".....	5,527	78.72	9,774	92.20	13,229	96.76
11 ".....	5,040	79.84	9,110	85.89	12,460	96.64
12 ".....	5,089	77.74	9,392	92.95	11,434	96.43
13 ".....	4,642	75.46	8,442	92.08	10,892	96.30
14 ".....	5,058	71.45	8,575	84.43	11,808	93.32
10-14 ".....	25,566	76.64	45,496	91.20	69,823	95.95
15 ".....	4,890	50.64	7,766	66.71	12,095	82.51
16 ".....	5,025	30.65	7,537	45.80	13,007	60.09
17 ".....	5,277	16.88	7,397	28.42	12,600	38.85
18 ".....	6,018	7.99	7,623	16.33	12,845	21.22
19 ".....	6,081	4.44	7,007	8.55	11,804	11.51
15-19 ".....	27,207	20.71	37,630	33.79	62,346	42.94
20-24 ".....	44,163	0.98	35,901	2.56	55,797	2.96

TABLE 3. Annual enrolments in publicly-controlled day schools, Canada and provinces, 1911-1936

Year	Total Number Enrolled									
	Canada ¹	Prince Edward Island	Nova Scotia	New Brunswick	Quebec ²	Ontario	Manitoba	Saskatchewan	Alberta	British Columbia
1911.....	1,361,205	17,397	102,910	68,951	389,123	518,605	80,848	72,260	51,650	49,451
1912.....	-	17,078	103,984	69,199	400,036	527,570	-	81,896	70,414	50,170
1913.....	1,470,844	17,555	105,269	69,663	411,784	544,138	83,679	101,463	79,909	57,384
1914.....	1,555,632	19,069	106,351	70,622	438,895	563,889	93,954	113,985	89,910	61,957
1915.....	1,603,032	18,402	107,768	72,013	448,087	571,387	100,963	122,862	97,285	64,264
1916.....	1,625,144	18,362	109,189	73,007	464,853	563,727	103,796	129,439	99,201	64,570
1917.....	1,650,600	18,190	109,032	71,981	463,808	565,539	106,688	142,617	107,727	65,118
1918.....	1,674,943	17,881	108,097	71,782	467,933	569,394	109,925	151,326	111,109	67,515
1919.....	1,750,395	17,587	106,082	71,029	492,829	589,514	114,662	164,219	121,567	72,006
1920.....	1,826,571	17,354	108,096	72,988	504,914	609,849	123,452	174,925	135,750	70,243
1921.....	1,880,805	17,510	109,483	73,771	518,410	637,467	129,015	184,871	124,328	85,650
1922.....	1,964,854	18,323	114,229	77,852	536,938	661,880	136,876	183,035	142,902	91,919
1923.....	2,009,125	17,742	114,458	78,887	543,559	677,106	142,369	194,313	145,803	94,888
1924.....	2,029,274	17,281	111,594	79,452	547,880	682,906	144,491	204,154	145,312	96,204
1925.....	2,054,588	17,427	112,352	80,360	555,721	692,553	145,834	206,595	146,692	97,054
1926.....	2,085,473	17,324	112,301	81,330	559,198	703,614	148,279	213,404	148,245	101,088
1927.....	2,119,634	17,210	112,556	81,916	563,704	720,625	148,763	218,569	151,202	105,008
1928.....	2,163,928	17,214	112,898	83,271	571,135	731,285	150,883	223,409	155,741	108,179
1929.....	2,184,570	17,180	113,309	84,370	582,661	738,477	150,517	227,263	161,235	109,588
1930.....	2,220,359	17,277	113,800	87,308	589,296	766,812	151,846	228,434	164,510	111,017
1931.....	2,264,106	17,506	115,511	88,836	606,120	772,388	153,553	230,492	165,786	113,914
1932.....	2,285,925	17,849	116,041	89,755	618,597	778,072	151,927	229,193	167,675	115,919
1933.....	2,287,171	18,247	117,238	90,888	624,045	774,868	150,070	228,007	168,992	116,816
1934.....	2,287,171	18,358	117,839	92,708	632,266	774,868	147,263	224,543	168,024	115,792
1935.....	2,242,351	18,247	116,798	92,288	638,885	724,870	144,741	221,335	167,954	117,233
1936.....	-	18,183	116,888	92,956	-	673,706	142,482	217,247	167,193	116,722

¹Nine provinces only.²Half year only.

³Starting in 1935 the enrolment in Ontario elementary schools is for the school year, thus eliminating some forty-odd thousand that used to be duplicated when enrolment was for calendar year.

⁴The Quebec figures in this table include private or independent schools. The figures for other provinces do not.

TABLE 4. Annual average attendance per day in publicly-controlled day schools, Canada and provinces, 1911-1936

Year	Average Daily Attendance									
	Canada ¹	Prince Edward Island	Nova Scotia	New Brunswick	Quebec ²	Ontario	Manitoba	Saskatchewan	Alberta	British Columbia
1911.....	870,532	10,511	61,250	42,791	301,678	305,648	45,303	38,278	32,559	32,517
1912.....	-	10,916	63,640	43,685	314,509	323,359	-	49,329	39,220	37,384
1913.....	978,862	11,003	65,080	44,375	324,447	340,223	48,103	56,005	45,888	45,072
1914.....	1,081,938	11,170	66,599	44,534	344,657	357,519	58,778	65,009	54,582	40,000
1915.....	1,112,769	11,694	70,361	47,889	360,897	367,059	68,260	72,113	61,112	52,494
1916.....	1,118,522	11,347	69,227	48,069	373,754	366,801	66,561	71,522	60,271	50,880
1917.....	1,143,212	11,319	70,118	46,880	367,868	371,129	69,209	88,758	65,374	52,577
1918.....	1,161,919	11,334	67,023	46,515	369,426	382,506	69,968	91,010	68,489	54,748
1919.....	1,187,191	10,908	65,906	45,797	370,710	391,539	72,072	98,791	74,776	56,692
1920.....	1,234,092	10,991	66,442	46,950	379,319	398,264	88,563	101,355	82,417	59,791
1921.....	1,349,259	11,446	78,238	49,714	401,655	450,556	85,137	113,412	89,401	68,507
1922.....	1,435,990	12,338	79,410	51,698	426,466	476,591	95,433	119,041	100,515	75,528
1923.....	1,468,633	11,763	83,472	53,745	426,938	482,068	98,787	130,499	103,612	77,752
1924.....	1,503,338	11,783	79,500	58,366	430,185	496,673	103,775	139,782	104,003	70,262
1925.....	1,540,420	12,259	80,318	58,307	443,741	508,044	104,312	144,650	105,978	82,721
1926.....	1,564,840	11,823	80,446	58,731	448,252	512,175	106,809	152,430	108,881	85,293
1927.....	1,600,407	11,777	81,426	61,070	452,757	528,485	106,793	157,392	112,401	88,306
1928.....	1,633,320	12,123	82,591	62,205	461,228	535,691	114,270	157,207	116,245	91,760
1929.....	1,704,665	12,144	84,275	63,312	468,537	583,334	116,766	161,658	120,229	94,410
1930.....	1,746,451	12,201	85,080	65,726	478,682	592,265	117,037	169,893	129,371	96,196
1931.....	1,801,955	12,721	87,418	70,856	502,890	607,164	120,703	176,716	134,112	99,375
1932.....	1,839,823	13,119	89,513	71,423	518,921	606,867	122,843	176,916	135,711	103,510
1933.....	1,856,907	13,810	92,866	72,204	525,215	613,084	121,190	175,002	137,558	104,978
1934.....	-	13,399	93,294	72,109	542,355	-	120,314	175,457	139,155	103,408
1935.....	1,862,236	13,499	90,565	70,757	539,441	614,249	117,379	175,323	138,202	104,824
1936.....	-	13,140	92,279	71,132	-	600,440	115,671	164,104	132,725	101,873

¹Nine provinces only.

²The Quebec figures in this table include private or independent schools. The figures for other provinces do not.

³Starting in 1935 the enrolment in Ontario elementary schools is for the school year whereas it was formerly for the calendar year. Hence no figure is available for 1934.

TABLE 5. Support of the publicly-controlled schools in the provinces, Canada, 1914-1936

NOTE.—The receipts shown in the following tables do not include any amounts raised by loans, or the sale of bonds or debentures, as all revenue of this nature must be repaid ultimately with money raised by local taxation. With the exception of the Maritime Provinces, for which the information is not available, the total debenture indebtedness of the schools of each province is given annually, thus showing the net increase or decrease per year.

Fiscal Year Ending	Government Grants ¹	Taxation within School Administrative Units	School Board Revenue from Counties	Fees	Total Current Revenue Recorded	Debenture Indebtedness	Administrative Units Operating Schools
	\$	\$	\$	\$	\$	\$	No.
Prince Edward Island—							
1914	130,959	64,761	—	—	195,720	—	472
1915	143,180	91,255	—	—	234,434	—	475
1916	146,825	70,810	—	—	217,635	—	474
1917	151,130	72,633	—	—	223,763	—	470
1918	145,865	84,273	—	—	230,138	—	465
1919	153,459	95,472	—	—	251,931	—	463
1920	179,284	131,012	—	—	310,296	—	451
1921	206,529	152,431	—	—	358,960	—	459
1922	236,012	157,766	—	Not available	393,778	Not available	459
1923	257,723	202,714	—	—	460,437	—	471
1924	241,921	169,949	—	—	411,870	—	469
1925	244,645	107,597	—	—	412,242	—	469
1926	242,336	171,650	—	—	413,986	—	469
1927	243,745	174,165	—	—	417,910	—	468
1928	245,479	179,004	—	—	424,483	—	467
1929	245,610	187,769	—	—	433,379	—	469
1930	249,247	189,609	—	—	438,856	—	464
1931	258,905	189,444	—	—	448,349	—	469
1932	263,094	218,477	—	—	481,571	—	474
1933	264,210	182,812	—	—	447,022	—	474
1934	282,351	165,704	—	—	448,055	—	475
1935	284,541	223,922	—	—	488,463	—	474
1936	265,723	199,172	—	—	464,895	—	473
Nova Scotia—							
1914	259,332	1,002,967	151,220	—	1,413,519	—	1,705
1915	269,059	1,066,982	150,934	—	1,486,975	—	1,728
1916	273,439	1,057,308	151,653	—	1,482,394	—	1,736
1917	291,714	1,157,907	147,122	—	1,596,743	—	1,736
1918	277,920	1,280,965	146,939	—	1,705,824	—	1,721
1919	269,564	1,460,577	192,910	—	1,923,053	—	1,873
1920	270,612	1,978,243	207,420	—	2,456,275	—	1,873
1921	316,383	2,370,712	469,779	—	3,156,871	—	1,665
1922	329,452	2,527,377	474,934	Not available	3,331,763	Not available	1,711
1923	346,305	2,313,460	496,934	—	3,156,699	—	1,706
1924	348,109	2,428,632	495,212	—	3,272,153	—	1,680
1925	356,859	2,522,265	493,853	—	3,372,977	—	1,697
1926	365,219	2,393,155	497,229	—	3,255,603	—	1,704
1927	368,579	2,393,125	497,879	—	3,259,580	—	1,707
1928	419,920	2,504,390	497,197	—	3,421,507	—	1,706
1929	436,757	2,549,461	495,227	—	3,481,445	—	1,706
1930	444,926	2,529,293	494,901	—	3,469,120	—	1,704
1931	509,462	2,667,789	465,533	—	3,642,784	—	1,714
1932	545,393	2,697,691	490,949	—	3,734,033	—	1,728
1933	672,570	2,631,324	487,130	—	3,691,024	—	1,729
1934	612,090	2,643,569	478,790	—	3,735,048	—	1,724
1935	631,233	2,604,137	483,185	—	3,718,555	—	1,722
1936	650,606	2,556,905	482,398	—	3,689,909	—	1,719
New Brunswick—							
1914	206,932	704,476	96,496	—	1,007,904	—	1,351
1915	212,835	701,753	97,423	—	1,012,011	—	1,393
1916	218,879	844,256	96,141	—	1,159,276	—	1,418
1917	218,747	843,357	97,234	—	1,159,338	—	1,397
1918	216,613	930,567	97,230	—	1,244,410	—	1,397
1919	209,206	1,153,163	99,097	—	1,461,466	—	1,307
1920	207,287	1,364,915	96,029	—	1,668,228	—	1,313
1921	278,605	1,779,926	146,023	—	2,204,554	—	1,291
1922	298,439	2,080,023	195,948	Not available	2,574,410	Not available	1,339
1923	319,367	2,058,391	204,103	—	2,581,861	—	1,348
1924	336,012	2,102,935	213,826	—	2,652,769	—	1,393
1925	417,200	2,736,430	211,885	—	3,365,515	—	1,434
1926	511,350	2,263,082	213,060	—	2,987,498	—	1,459
1927	516,221	2,413,961	212,350	—	3,142,532	—	1,458
1928	432,865	2,337,740	212,616	—	2,983,221	—	1,463
1929	440,020	2,361,978	214,845	—	3,016,843	—	1,535
1930	449,702	2,405,894	212,172	—	3,067,769	—	1,481
1931	459,029	2,467,510	210,509	—	3,137,049	—	1,483
1932	430,449	2,389,050	214,009	—	3,033,507	—	1,481
1933	412,880	2,249,769	219,009	—	2,882,557	4,577,420	1,421
1934	426,434	1,922,036	220,063	—	2,568,533	4,966,150	1,476
1935	446,472	1,938,568	223,307	—	2,607,347	5,042,950	1,498
1936	462,182	1,964,287	223,493	—	2,649,962	4,961,800	1,518

¹Government Grants are for a 14-month period due to a change in the fiscal year.

²Includes contributions to teachers' salaries in the Maritime Provinces, and in New Brunswick, grants made to schools by the Vocational Education Board since 1921.

TABLE 5. Support of the publicly-controlled schools in the provinces, Canada, 1914-1936—Con.

NOTE.—The receipts shown in the following tables do not include any amounts raised by loans, or the sale of bonds or debentures, as all revenue of this nature must be repaid ultimately with money raised by local taxation. With the exception of the Maritime Provinces, for which the information is not available, the total debenture indebtedness of the schools of each province is given annually, thus showing the net increase or decrease per year.

Fiscal Year Ending	Government Grants	Taxation within School Administrative Units ¹	School Board Revenue from Counties	Fees ²	Total Current Revenue Recorded	Debenture Indebtedness	Administrative Units Operating Schools
	\$	\$	\$	\$	\$	\$	No.
Quebec—							
1914 ³							
1915	577,635	5,545,914	—	347,923	6,471,472	17,732,581	1,633
1916	587,264	6,016,965	—	365,281	6,969,510	20,570,354	1,657
1917	612,007	6,547,390	—	416,113	7,575,480	24,152,955	1,698
1918	668,947	6,832,846	—	376,097	7,777,890	28,894,971	1,673
1919	647,760	6,671,827	—	408,070	7,436,457	34,768,998	1,676
1920	617,238	9,807,527	—	449,050	10,673,815	34,173,898	1,718
1921	635,078	11,511,825	—	497,682	12,644,585	36,237,523	1,718
1922	624,564	12,666,565	—	520,498	13,811,617	39,179,020	1,746
1923	781,971	13,334,402	—	600,717	14,717,090	46,841,101	1,764
1924	943,650	14,849,315	—	612,311	16,405,276	46,596,560	1,781
1925	987,805	15,529,353	—	636,261	17,153,419	50,060,971	1,792
1926	993,509	15,647,512	—	630,762	17,271,783	50,413,950	1,800
1927	1,077,073	16,237,999	—	549,725	17,894,797	53,203,161	1,808
1928	1,195,324	16,505,537	—	663,010	18,255,877	57,122,017	1,834
1929	1,189,919	17,629,630	—	566,006	19,385,555	58,062,578	1,840
1930	1,467,502	17,613,082	—	566,735	19,647,319	61,646,555	1,828
1931	1,429,033	18,697,183	—	616,735	20,742,951	65,886,105	1,827
1932	1,269,210	18,214,999	—	632,792	20,117,001	71,669,326	1,830
1933	1,487,116	19,027,888	—	595,235	21,110,339	71,446,847	1,843
1934	1,218,836	19,391,697	—	626,744	21,237,377	76,415,272	1,853
1935	1,137,886	19,002,389	—	595,131	20,735,404	82,919,989	1,859
1936	1,316,019	18,575,530	—	656,854	20,548,403	79,556,117	1,860
Ontario—							
1914	1,092,160	15,601,950	428,336	188,202	17,310,648	25,760,262	—
1915	1,105,031	13,635,456	427,542	198,293	15,366,322	27,994,791	—
1916	1,082,562	12,908,793	452,268	189,380	14,723,003	29,618,968	—
1917	1,158,447	13,941,525	436,593	181,005	15,717,570	30,324,383	—
1918	1,316,289	15,171,982	501,469	215,922	17,205,662	30,696,924	—
1919	1,698,570	16,508,897	498,023	263,894	18,969,384	33,362,213	—
1920	2,414,761	22,051,200	705,124	277,031	25,448,106	40,686,584	—
1921	3,472,067	24,635,792	842,720	217,049	29,169,234	48,863,189	—
1922	4,041,233	27,039,282	1,072,831	134,894	32,288,240	67,413,282	—
1923	4,380,194	28,671,009	1,326,740	156,187	34,534,139	64,268,132	—
1924	4,613,020	30,072,768	1,534,804	105,770	36,326,362	69,891,227	—
1925	4,722,664	30,792,328	1,686,854	114,171	37,316,017	67,920,832	—
1926	4,775,853	30,903,925	1,774,592	151,149	37,605,519	71,061,955	—
1927	4,940,903	32,300,935	1,923,813	143,163	39,308,814	72,388,782	—
1928	5,078,005	34,072,913	2,068,889	392,215	41,612,022	75,088,615	—
1929	5,385,354	36,179,339	2,341,337	357,780	44,276,816	80,353,869	—
1930	5,600,500	39,508,961	2,554,480	314,506	47,678,047	86,551,681	—
1931	6,276,656	39,544,376	3,100,225	450,447	49,351,714	89,781,934	—
1932	6,090,276	37,217,288	2,864,146	No record	46,171,710	88,143,815	6,600
1933	5,240,304	35,476,241	2,755,636	—	43,472,241	84,722,797	(approx)
1934	5,010,385	35,386,482	2,631,561	—	43,028,428	83,068,135	—
1935	4,739,116	33,548,155	2,195,651	—	40,482,922	79,570,591	—
Manitoba—							
1914	300,582	2,073,449	—	—	3,064,031	6,819,013	1,535
1915	468,335	3,047,670	—	—	3,516,005	8,428,400	1,570
1916	503,774	3,296,667	—	—	3,800,441	9,985,559	1,606
1917	522,293	3,445,239	—	—	3,967,532	9,986,175	1,650
1918	616,977	3,736,452	—	—	4,353,429	8,798,018	1,602
1919	589,147	4,200,519	—	—	4,789,666	8,255,573	1,765
1920	661,981	4,947,186	—	—	5,609,167	8,480,086	1,785
1921	822,186	6,922,864	—	—	7,745,050	10,483,085	1,816
1922	1,058,292	7,991,517	—	Not available	8,049,809	13,325,873	1,792
1923	1,011,048	8,173,986	—	—	9,185,034	13,496,839	1,763
1924	1,096,010	7,468,737	—	—	8,564,747	13,687,574	1,851
1925	1,143,405	7,450,022	—	—	8,593,427	14,534,755	1,821
1926	1,091,151	7,302,044	—	—	8,393,195	14,790,474	1,802
1927	1,110,575	7,365,798	—	—	8,476,373	14,730,128	1,808
1928	1,191,924	7,555,561	—	—	8,747,485	15,104,675	1,885
1929	1,208,809	7,611,029	—	—	8,810,838	15,257,885	1,802
1930	1,285,898	7,821,988	—	—	9,107,886	15,097,103	1,929
1931	1,310,587	7,675,879	—	—	8,986,466	15,006,997	1,938
1932	1,299,025	6,854,536	—	—	8,134,101	15,854,634	1,944
1933	1,207,836	6,029,404	—	—	7,237,240	15,611,520	1,943
1934	1,124,876	5,492,577	—	—	6,617,753	15,879,826	1,966
1935	1,042,824	6,016,858	—	—	7,059,682	15,457,253	1,948
1936	988,434	5,635,473	—	—	6,623,907	14,592,013	1,902

¹The Ontario figures include the Township Grant towards the salary of rural public school teachers. In the rural municipalities of Manitoba about three-fifths of the school support is equalized by a uniform school rate levied over the whole municipality.

²In Ontario, from 1921 to 1930 nothing is included for Continuation Schools, and in the years 1924-27 nothing for High Schools and Collegiates.

³Figures for 1914 not available.

TABLE 5. Support of the publicly-controlled schools in the provinces, Canada, 1914-1936—Con.

Fiscal Year Ending	Government Grants	Expenditure within School Administrative Units	School Board Revenue from Counties	Fees	Total Current Revenue Recorded	Debtenture Indebtedness*	Administrative Units Operating Schools
	\$	\$	\$	\$	\$	\$	No.
Saskatchewan—							
1914	920,000	4,589,000	-	-	5,509,000	6,885,710	3,073
1915	1,050,045	4,121,000	-	-	5,171,045	7,555,425	3,385
1916	1,046,867	4,839,000	-	-	5,885,867	8,145,756	3,629
1917	1,187,653	5,107,000	-	-	6,294,653	7,394,230	3,816
1918	1,253,283	5,796,971	-	-	7,050,254	8,334,123	3,963
1919	1,339,019	7,385,471	-	-	8,724,490	8,962,375	4,133
1920	1,337,067	9,149,253	-	-	10,486,320	9,962,769	4,177
1921	1,461,610	9,973,725	-	-	11,465,335	10,862,244	4,289
1922	1,971,159	10,485,864	-	-	12,457,003	11,890,582	4,351
1923	1,834,050	10,510,840	-	-	12,344,870	12,175,045	4,343
1924	2,074,660	10,430,167	-	-	12,504,827	11,034,870	4,394
1925	2,129,745	10,460,784	-	-	12,590,529	12,043,540	4,438
1926	2,265,481	10,696,154	-	-	13,111,829	11,933,064	4,525
1927	2,340,536	10,896,918	-	-	13,434,700	13,090,426	4,567
1928	2,402,621	11,367,519	-	-	13,978,582	13,321,836	4,643
1929	2,826,700	11,542,859	-	-	14,369,559	14,113,091	4,704
1930	2,763,903	10,670,745	-	-	13,434,648	15,659,373	4,763
1931	2,704,242	8,114,719	-	-	10,818,961	15,945,984	4,766
1932	1,919,153	6,870,609	-	-	8,789,762	15,726,862	4,880
1933	1,597,240	5,959,179	-	-	7,556,419	14,385,153	4,892
1934	1,593,706	5,900,000	-	-	7,493,706	14,130,229	4,919
1935	1,613,960	6,075,000	-	-	7,688,960	13,826,765	4,923
1936	1,638,417	6,307,000	-	-	7,945,417	-	4,938
Alberta—							
1914	507,682	3,025,775	-	-	3,533,457	11,027,378	2,027
1915	540,235	3,733,323	-	-	4,273,558	10,887,922	2,138
1916	553,141	3,749,008	-	-	4,302,149	10,357,892	2,170
1917	987,170	3,657,511	-	-	4,644,681	10,109,278	2,405
1918	625,830	5,132,232	-	-	5,758,062	10,039,067	2,796
1919	713,083	5,001,713	-	-	5,714,796	10,175,446	2,766
1920	885,524	6,894,401	-	-	7,779,925	10,470,486	2,826
1921	1,146,722	7,432,036	-	-	8,578,758	11,006,300	2,881
1922	1,241,518	7,475,589	-	-	8,717,107	11,430,451	2,905
1923	1,117,023	8,282,050	-	-	9,399,073	11,444,180	3,053
1924	1,054,733	8,327,327	-	-	9,382,060	11,064,424	3,093
1925	1,084,879	8,197,098	-	-	9,281,977	10,894,256	3,041
1926	1,137,638	8,241,715	-	-	9,379,353	10,704,634	3,124
1927	1,218,572	8,801,979	-	-	10,020,551	10,574,633	3,202
1928	1,321,158	8,278,494	-	-	9,599,652	10,950,461	3,242
1929	1,355,962	8,419,440	-	-	9,775,402	11,833,631	3,314
1930	1,563,995	8,804,951	-	-	10,368,946	12,637,146	3,346
1931	1,511,770	8,631,890	-	-	10,143,660	12,026,157	3,395
1932	1,075,229	8,366,781	-	-	9,442,010	11,541,291	3,451
1933	1,587,797	7,075,762	-	-	8,663,560	11,074,602	3,468
1934	1,444,705	7,088,630	-	-	8,533,335	10,466,837	3,449
1935	1,432,085	7,489,823	-	-	8,921,908	9,883,239	3,492
1936	1,309,238	7,540,419	-	-	8,849,657	9,359,594	3,542
British Columbia—							
1914	1,694,845	2,749,223	-	-	4,444,068	9,089,389	374
1915	1,416,000	2,309,795	-	-	3,725,795	8,117,539	410
1916	1,386,162	1,626,028	-	-	3,011,190	No record	419
1917	1,402,560	1,637,539	-	-	3,040,099	8,918,864	432
1918	1,452,858	1,865,218	-	-	3,318,076	9,144,904	575
1919	1,546,328	2,437,566	-	-	3,983,894	9,092,856	582
1920	1,748,419	3,314,246	-	-	5,062,665	9,687,245	626
1921	2,156,748	4,235,457	-	-	6,392,205	10,368,144	665
1922	2,290,632	4,561,540	-	-	6,852,172	10,485,549	752
1923	2,305,064	4,453,323	-	-	6,758,387	10,967,450	744
1924	2,305,946	5,023,301	-	-	7,329,247	10,904,262	760
1925	2,371,728	5,105,418	-	-	7,477,146	11,322,690	759
1926	2,380,668	5,095,420	-	-	7,476,088	12,101,417	746
1927	2,568,326	5,769,788	-	-	8,338,114	13,259,740	761
1928	2,092,384	5,728,578	-	-	7,820,962	14,028,748	758
1929	2,026,762	7,384,075	-	-	9,410,837	15,815,516	792
1930	2,719,106	6,364,939	-	-	9,084,045	15,935,508	803
1931	2,856,370	6,225,661	-	-	9,082,037	15,936,753	811
1932	3,089,566	6,704,200	-	-	9,793,766	15,592,820	830
1933	2,302,947	6,091,525	-	-	8,394,472	15,448,396	821
1934	2,083,762	5,601,431	-	-	7,685,193	15,233,204	827
1935	2,175,619	5,623,115	-	-	7,798,734	14,922,884	762
1936	2,270,466	5,802,969	-	-	8,073,435	14,631,539	773

*In Saskatchewan the debtenture indebtedness of the secondary schools is not included until 1922.

**RURAL AND URBAN COMPOSITION OF THE
CANADIAN POPULATION**

by

S. A. Cudmore and H. G. Caldwell

FOREWORD

Introductory.—The rapid growth of urban as compared with rural population is one of the most momentous of modern tendencies, a fact emphasized in the Administrative Report of the Dominion Statistician on the Seventh Census of Canada, 1931. The tendency toward urbanization, which has become an urgent social and economic problem, constitutes the basis or background for this monograph on the Rural and Urban Composition of the Canadian Population, the findings and conclusions herein summarized being indirectly, if not all directly, associated with this principal theme.

By way of introduction the major economic factors on which the density of any population depends were found to include primarily the fertility of the soil, the transportation facilities and the relative advantages or disadvantages of concentration of manufacturing production and of commercial and administrative activities; in addition, the maintenance of law and order and the multiplication of specialized professions and occupations have important influences, as also such social and biological concepts as natural fecundity, human gregariousness, standards of living, and sectionalism resulting from differences in race and religion.

Urbanization in Other Countries.—The factors determining population density were illustrated very briefly by examples from ancient, mediæval and modern times, and in order that a proper orientation might be given to the subject of town and city growth in Canada, a short examination was made of both early and more modern trends of urban versus rural population, not only in various countries of the Western civilization, particularly England, Scotland, Germany and United States, but also in Japan and India. A disproportionate urban expansion has developed in all these countries, but in point of time the trends were, of course, not the same, nor were they identical in extent or rate. While the great variety of methods of defining rural and urban population render accurate international comparisons of urban trends and their causes almost impossible,* Canadian urbanization has apparently proceeded along lines more akin to those of the United States than of any other country. However that may be, the general modern tendency toward urbanization has been almost world-wide.

In many countries the influx of men and women into the towns to seek industrial employment and organized advantages lacking in the countryside has caused overcrowding and slums, thereby endangering health and in many ways resulting in heavy drains on the public purse. Town planning and other experiments both by governments and voluntary organizations are promoting social activities and amenities leading to the establishment of garden cities in direct contrast to soulless dormitory towns. Considerations of health and economy alike are demanding on all sides these and other solutions for the malaise of overgrown cities, but fortunately for Canadians, urban congestion with its ensuing evils has not proceeded in the Dominion to the very serious and menacing extent suffered by some of the larger countries.

Three Definitions Analysed.—This study of urbanization in Canada has involved the use of various methods of measuring or defining urban and rural population. For the period of some two hundred years prior to 1851, the study consists perforce mainly of a review of the population of the early settlements and the more important urban centres. From 1851 onward, the growth in the number and the population of towns and cities of 5,000 or more is traced from census to census. However, from the First Decennial Census, 1871, to the Seventh, 1931, a definite distinction is made between total rural and total urban population, the urban being defined as the number of persons in cities, towns and villages incorporated under the laws of the various provinces and Yukon, while the rural includes all the remainder of the population. This usual manner of defining or comparing rural and urban population, the first of five considered, is employed throughout unless otherwise definitely specified.

*See two articles by Henri Dunlo, Statisticien à la Direction de la Statistique Générale et de la Documentation, France, in *Revue de l'Institut International de Statistique, La Haye*: (a) 1937, *Livraison 4, La Population Rurale, sur l'adoption d'une définition susceptible d'être internationalement adoptée*, pp. 347-57; (b) 1938, *Livraison 8, Rapports et Communications pour la Session de Prague, Rapport de la Commission pour la Définition de la Population Rurale*, pp. 229-34.

The second method of defining urban and rural involved the transfer of the number of inhabitants of incorporated places of less than 1,000 persons from the urban to the rural category; the setting of the dividing line at 1,000 is a more or less arbitrary procedure, the United States authorities preferring for their census classifications the considerably higher figure of 2,500. The total population of Canadian places of less than 1,000 in 1931 amounted to only 411,000 or less than 4 p.c. of Canada's total population; but the percentages in the provinces, owing in no small part to the very different prerequisites to incorporation under provincial legislation, ranged from 0.53 in New Brunswick to 11.26 in Saskatchewan. Although the aggregate population of these municipalities with fewer than 1,000 persons does not represent a very large proportion of the total for the Dominion, they have been of considerable significance in the study of de-ruralizing trends. Whereas the urban population, as first defined, expanded in 1911-21 by 33 p.c. and in 1921-31 by 28 p.c. and whereas the rural increased during the same decades by 12.8 p.c. and 8.3 p.c. respectively, the number of inhabitants of incorporated places under 1,000 in 1931 which existed in 1921 increased by approximately only 5.9 p.c. in 1921-31, while the number in such places which also existed in 1911 increased in 1911-21 by approximately only 7.2 p.c. and in 1921-31 by a mere 2.2 p.c.

The third distinction between rural and urban is made simply by comparing the number of persons residing on rural farms with the residue of the population, the first classification of this kind in the Dominion Census having been adopted in 1931. The residual class, referred to as non-farm, comprises (1) residents of incorporated places of whom 33,000 persons in 1931 were on urban farms or urban market gardens, mostly in the Province of Quebec, and (2) an important intermediate group of considerable mobility, numbering 1,581,000 in 1931 or over 15 p.c. of the total population. Most of the people in this intermediate group live in suburban districts, unincorporated hamlets and police villages and are engaged less in farming than in lumbering, fishing and trapping, selling and distributing goods and rendering professional and other services. The city-ward trek of many thousands of these non-farm ruralites resulted from the development of large scale production, which led to the absorption, by urban factories and offices, of numerous rural workmen and craftsmen, as well as of other younger men and young women from both farm and village.

Additional Methods Recommended.—These first three definitions are open to certain objections, some of which have already been intimated. Accordingly, two other methods of classifying rural and urban are recommended for experimentation and possibly for consideration in connection with tabulations of data in future censuses. For a cross-section view of the rural and urban composition of the population, either of these two definitions would be superior to the first three, but the limited amount of data available would render historical comparisons over long periods impossible.

One of these suggested methods, the fourth in this series of definitions, is based on the hypothesis that since some towns and cities of moderate size resemble rural society more than urban, while many smaller aggregates are typically urban, "it is preferable to define rural society typologically rather than statistically".* The procedure therefore involves a semi-typological classification or analysis of the population of every community, large or small, incorporated or unincorporated, to determine whether it is "overwhelmingly" rural or urban in character or type, an "overwhelming" majority to be set at some figure between 65 p.c. and 75 p.c.

Under the other suggested definition, the fifth, the urbanites would include, in addition to residents of incorporated places, the population of all densely peopled rural or partly rural areas, such as townships and district municipalities, parishes, police villages and hamlets, which are satellite to, or in a good measure economically dependent upon, nearby urban centres, even if these urban places are not sufficiently populous to be designated 'greater' cities. The difficulties experienced in applying this definition include the setting of boundaries and limits, the question of maximum distance to be accepted between the town or city proper and its satellite or dependent community, and the requisite degree of economic dependence of such community upon its central or parent body. The tremendous extension of 'greater' cities in Canada and of London, England, and of 'Metropolitan Districts' as they are called in the United States, are summarized in succeeding paragraphs on the growth of urban population.

* See article on "Rural Society" in *The Encyclopaedia of the Social Sciences*, Vol. 13, pp. 469-71, especially p. 469, by Professor Carl C. Zimmerman, Department of Sociology, Harvard University.

CENSUS OF CANADA, 1931

Growth, 1665-1851.—The growth of the rural and urban population of Canada is examined during two definite periods, *viz.*, (1) from the first census of New France in 1665-6 to 1851 and (2) from 1851 to 1931. In 1666 the settlements from which developed the cities of Quebec, Three Rivers and Montreal had together only 1,627 souls or slightly more than half the total population of the Colony, but the rural element was soon increased by colonization, with the result that throughout most of this first period the urban population represented a comparatively small proportion of the total population in Canada, as well as in the Maritimes, both of which sections of the country were economically fairly self-sufficient; the few cities were mainly distributing or trading centres.

The middle of the nineteenth century constituted a transition period in the history of Canada. Up to that time the water routes had been the chief means of transportation; slow at their best, and closed several months of the year owing to climatic conditions, they were not conducive to the establishment of urban manufacturing districts. Nevertheless, they carried many thousands of settlers to Upper Canada, whose population at the Census of 1851-2 surpassed for the first time that of Lower Canada. The Census of 1851, moreover, marked the beginning of the regular decennial census of this country. Development of manufacturing production and a much greater growth of urban population were stimulated by (1) the Tariff Acts of 1858-9, which were of a distinctly protectionist character, and (2) the railway expansion which began with the chartering of the Grand Trunk in 1852. Hence, the division of the historical study at the year 1851.

Growth, 1851-1931.—Even at the Census of 1871, the first taken after Confederation, urban Canada may be said to have ended at the shores of Lake Huron, although far distant Victoria had an 1870 population of 3,270. However, by the Second Decennial Census, the West had commenced to contribute to the population in communities of 5,000 and over, Victoria having exceeded 5,900 and Winnipeg having shown mushroom growth from 241 in 1870 to almost 8,000 in 1881. Vancouver, a small hamlet in 1886, rose to 13,700 in 1891, more than doubled this at over 29,000 in 1901 and quadrupled the latter figure in the next decade. Calgary and Edmonton increased about tenfold between 1901 and 1911, Regina jumping from about 2,200 to over 30,000 during the decade. Northern Ontario towns also sprang up quickly, but it was not until the Census of 1901 that one of them, Sault Ste. Marie, entered the group of places of 5,000 or more inhabitants; Fort William, Port Arthur and North Bay joined it in the Census of 1911, Sudbury following in that of 1921.

The Dominion's total urban population, as usually defined, soared from 722,343 in 1871 to 5,572,058 in 1931 or 7.7 times the former figure, while the rural increased from 2,966,914 to 4,804,728 or only 1.6 times. The greatest numerical increase in both rural and urban in any decade between the Censuses of 1871 and 1931 occurred in 1901-11 when it more than equalled that in the three preceding decades combined. While in 1901 the urbanites represented nearly 2.8 times the number in 1871, by 1911 the ratio had climbed to over 4.3. The advance in the percentage of urban to total population from 37.5 in 1901 to 45.4 in 1911 was greater than in any other decade between the Censuses of 1871 and 1931, in which years the percentages were respectively 19.6 and 53.7.

Between 1901 and 1931 the number of people in urban communities rose by 177 p.c., while those in the rural increased only 43 p.c. Moreover, 80 p.c. of this rural increase was due to expansion in the Prairie Provinces, nearly 15 p.c. to that in British Columbia and the remainder of about 5 p.c. to a net rural increase in the other five provinces. Nova Scotia and Prince Edward Island, however, showed relatively large decreases in their rural population, not only at these four censuses between 1901 and 1931, but also at that of 1891; and the province of Ontario, while it had a net rural increase between the Censuses of 1901 and 1931, showed considerable decreases at those of 1891, 1901 and 1911, and despite a moderate increase in 1921 and a very substantial one in 1931, its ruralites in the latter year numbered 15,383 fewer than at its peak census year in 1881.

'Greater' Cities and Satellite Communities.—An outstanding factor in Canadian urbanization, especially during the twentieth century, is the enormous growth of suburban or satellite areas near or adjacent to, not only the bigger cities, but also the smaller ones and larger towns. In the United States the rural areas satellite to the larger cities grew by 54 p.c. during the decade 1920-30, which was a greater rate than in any other part of the population and almost

2.5 times as great as that of the cities themselves.* An approximation of the population increase in the rural areas satellite to ten 'greater' cities of Canada during the decade 1921-31 showed a percentage somewhat larger than the foregoing 54 for the United States.

The largest of these ten 'greater' cities was, of course, Montreal with over a million people in 1931 or about 180,000 more than the city proper. By almost that same figure was the population of Toronto less than 'Greater Toronto', although the latter had a total of only a few thousand above the 800,000 mark. The excess in the cases of 'Greater Winnipeg' and 'Greater Vancouver' was from 60,000 to 65,000, 'Greater Ottawa' and 'Greater Windsor' from 45,000 to 50,000, 'Greater Quebec' 36,000, 'Greater Halifax' 15,000 and 'Greater Hamilton' and 'Greater Saint John' just over 8,000.

Maps, Charts and Tables.—Maps of these ten 'greater' cities of Canada and their constituent satellite communities in 1931, together with relative population data, are presented in Chart C, while the population trends of various districts in or about London, England, at each decennial census back to 1801, are depicted in Chart A. Table 1 and Chart B show the percentage of population in places of 8,000 or more at each decennial census in the United States since 1790. Trends of urban, rural or total population at each decennial census in Canada since 1871 are illustrated in Charts D to G, which are based on data in Tables 2 and 3. The second and third methods of defining rural and urban population were applied to 1931 data, the former, as already indicated, placing the dividing line at incorporated places with 1,000 persons and the latter distinguishing between rural farm and non-farm population; the results of the two procedures appear respectively in Tables 4 and 5 and Charts H and I. Charts J to R and Tables 6 to 32 deal with various attributes of population in Canada, especially with pertinent aspects of their rural and urban distribution.

De-ruralizing Trend Decreasing.—Finally, in regard to the future, is it likely that the de-ruralizing trend will continue? Of course, no definite answer can be given to this question but certain conditions suggest that the rate of the trend will decrease. In the first place, the percentage of urban to total population was 19.6 at the Census of 1871 and 45.4 at that of 1911. During this forty year period the average absolute increase per decade was 6.5 points and the figure for each decade adhered fairly closely to this average, except in 1901-11 when it was 7.9 points or the highest reached between any two successive censuses since Confederation. In 1911-21 and 1921-31 the increases were respectively only 4.1 and 4.3. The rate of the de-ruralizing trend had therefore already commenced to decline in the two decades between 1911 and 1931.

Again, at the Census of the Prairie Provinces in 1936, the increase in the total population of both Manitoba and Saskatchewan was caused entirely by increases in the rural, the urban population actually decreasing. In Alberta the rural increase was approximately five times greater than the urban. Even if it could be ascertained that the same reversal of conditions occurred between 1931 and 1936 in the other provinces, it could not be rightly claimed that the urban trend in Canada had ended, but these Western figures do lend support to the conviction that opposing factors are at least reducing the rate of urbanization.

Checks to Urbanization.—One of the most significant checks to city-ward migration is the unfavourable economic situation that has prevailed under varying degrees of severity since 1930. Cyclical business depressions have entailed wide-spread industrial recessions and unemployment. Unemployed urbanites have been returning to the countryside to the shelter of their former homes or the farms of relatives. Others, including the young people, for whom prospects have not been very bright for some years, are leaving the cities and towns to seek employment in such occupations as farming, lumbering, mining, fishing, hunting and road-building. Even when cyclical industrial conditions improve in urban places, the fear of again suffering experiences similar to those during the latest business crises will tend to prevent a rush back to the town factory or city office. Another check, perhaps of greater moment, is the more permanent displacement of workers through the increase in technological unemployment and the development of mechanization.

* See article on "Population Growth and Housing Demand" in *The Annals of the American Academy of Political and Social Science*, March, 1937, pp. 131-7, especially p. 135, by Warren S. Thompson, Director, Scripps Foundation for Research in Population Problems.

Differential fertility is another factor which cannot be ignored. If all migration of population between rural and urban communities were stopped, the ruralites would soon regain a majority because the standardized birth rate is considerably greater in the country than in the city. The fact that fertility rates are greater in smaller towns and rural districts than in cities and larger towns is generally recognized.* In Canada, for instance, in 1931 the standardized birth rate for all rural parts, including villages and other incorporated places of 5,000 persons and under, averaged 27.5 per thousand of population, while the rate for the Dominion as a whole was only 23.1, for cities of 40,000 to 100,000 persons just 17.7, and for the larger cities 17.1.

Summaries and Further Investigation.—Birth rate and such related attributes of population as conjugal condition and age, and their numerous rural-urban ramifications, are possibly not less interesting than the other topics treated, including racial origin and nativity. The conclusions and findings on all the subjects, while comprehensive, are not exhaustive. Some of the findings and, of necessity, implications have already been mentioned, while others are outlined in the summaries of the various chapters. The end of the monograph, however, is by no means the end of the investigation, this contribution being mainly introductory. The fundamental rural-urban population problems have been presented and analysed in a way that suggests many an avenue for further study and attack by the researcher interested in more detailed phases of urbanization.

*See (a) *Census of England and Wales, 1911*, Vol. XIII, Part II *Fertility of Marriage*, Table LIII, p. cxxii.

(b) *Studies of Differential Fertility in Sweden* by K. A. Edlin and E. P. Hutchinson, Ch. II, Table 3, p. 32.

(c) Central Bureau of Statistics of Holland, *Statistiek van den Loop der Bevolking van Nederland over het Jaar, 1936* Introduction II, *Geboorten*, p. XI.

PART A
INTRODUCTION
THE DENSITY OF POPULATION

CHAPTER I

THE FACTORS DETERMINING THE DENSITY OF POPULATION

Summary of Factors.—Mankind derives its main sustenance from the soil. Therefore, the density of any population depends primarily upon the following factors* :—

- (1) the fertility of the soil upon which it lives, the life-sustaining efficiency of its ordinary products and the usual level of its production and standard of living;
- (2) the transportation facilities available to bring food to that population from outside, this ordinarily involving a corresponding obligation upon that population to produce commodities that may be exchanged for the foods which it secures from outside;
- (3) the normal maintenance of law and order both internally within the society, and externally between it and other societies, so as to assure the safe and continuous operation of such transportation facilities;
- (4) The relative economic advantage or disadvantage, under the conditions prevailing in a particular society, of the concentration of manufacturing production, commerce and administrative activities in the most populous communities.

These factors are so important, and so continuous in the influence which they have exerted throughout the course of history upon the density of population and its aggregation into urban communities, that they must be considered in some detail.

(1) **Fertility of the Soil.**—In the first place, after primitive man had learned to produce "the kindly fruits of the earth" for his subsistence, the density at which he could exist depended partly upon the fertility of the soil and partly upon his skill in utilizing that fertility by cultivating the land and planting there the foods which gave the largest yields in proportion to area. Thus on alluvial lands in the valleys of the Tigris and Euphrates, the Ganges and the Yang-tse-kiang, the Nile with its rich delta, and on other fertile areas, it has been possible for densely settled purely agricultural communities to exist continuously for thousands of years. These communities feed themselves from their own produce; the inhabitants of the two last-named valleys, in fact, live largely upon rice, which is an extraordinarily prolific and nourishing grain food. It is not uncommon for agricultural communities of this type to reach a population density of one thousand or more to the square mile. Indeed, we are told that an acre of rice will normally provide the food of eight persons; the only more prolific nutriment is said to be the fruit of the bread-fruit tree, which is peculiar to the South Sea Islands.

A population of one thousand or more which obtains its food from a square mile of ground must, of course, live at a low standard of comfort, must use vegetable rather than animal foods and must have very little variety in its diet. Yet these have been for thousands of years the living conditions of the masses of the people in the areas to which reference has been made. The Nile Valley, with its enormous population concentrated on a narrow strip of soil inundated by annual floods, is the classic instance of a densely settled country of this kind. Mention may also be made, however, of the delta of the Ganges, the life of which has been described in the interesting volume, "The Economic Life of a Bengal District", by J. C. Jack. In such areas the great majority of the people live in villages of a few hundred inhabitants who go daily into the fields to work, as was also the custom in the manorial villages of Europe.†

* The economic factors are here emphasized. The influences of social and biological conditions, such as standards of living, human gregariousness, natural fertility, and sectionalism as manifested by differences in race and religion, while probably no less important than the economic, are very difficult to measure, especially over past years. Some light is, however, thrown upon the operation of non-economic factors, particularly in Part C.

† "The general density of Cochin State, including both the thickly populated coast lands and the almost uninhabited high lands, is 814·2 persons per square mile and reaches in one village the amazing maximum found in any purely rural population of over 4,000 to the square mile. There is, however, in Bengal an even higher general level of density, since the Dacca Division has a mean density of 935 persons for a population of 12,884,104 and reaches a rural density of 2,413 for Munshiganj sub-division, which has an area of 294 square miles."—Report on the Census of India, 1931, Vol. I, p. 4.

In the Indian Journal of Economics for October, 1933, Dr. R. K. Mukerjee of Lucknow University says (p. 145): "Many rural areas here (in Eastern Bengal) exhibit a density ranging from 1,500 to 3,000 persons per square mile, which is maintained by a well-arranged succession of crops and vegetables and by orchards, without any symptom of economic pressure."

(2) **Transportation Facilities.**—In regard to the second factor, early transportation facilities were very primitive and the best roads were the rivers. When in ancient times a village grew into a town or city so large that its population could no longer be provided with food from the immediate vicinity, extra food and other requirements could best be brought in by river. Thus the villages which grew into what we should call towns and cities were those situated on the banks of such rivers as the Nile, the Tigris and Euphrates, the Indus and Ganges, the Yang-tse-kiang and the Hoang-ho. The Nile, in particular, favoured the growth of larger communities, since the current would carry the river-boats northward, while the prevailing northern winds would carry the sail boats (known as *dahabeahs*) southward. Thus the Nile boatman of ancient times had little to do but steer and manage his sails in carrying his produce to Thebes and Memphis for market. Somewhat similar conditions prevailed on the Tigris and Euphrates, as we learn from the Laws of Hammurabi and other Babylonian writings.

Still later, when man had learned to sail the inland seas and then the open oceans, the chief cities of the ancient and the modern world continued to grow, especially at those points where important rivers run into the sea. This has been less true since the advent of the railway, but even to-day there are very few cities of any consequence which are not situated on navigable waters, although our own city of Regina may be cited as an exception to this rule. While there is possibly a case for putting some other Western cities into the same category, it might be countered with the suggestion that even where rivers are to-day of little commercial importance, yet they were the main avenues of trade at the time when the cities were founded and are thus responsible for the original existence of aggregations of population, which later grew into cities by momentum. Even now, water transportation is generally cheaper than land transportation.

Again, the ancient city-states, like Athens and Rome, did not consider it incumbent upon them to give manufactures in return for the foodstuffs which they received from their dependent territories. They did, however, give other forms of compensation, for example, the Athenians in the days of Pericles gave commerce or protection, and the Romans, protection and government, and it may be admitted that probably to the ancient world the *pax Romana* was worth the *panem et circenses* which the territories of the Republic and later of the Empire were obliged to provide for the people of the capital. Further, the wealthier landowners had to maintain a "town house" to be "in the swim", while in some cases, as when Peter the Great founded St. Petersburg, the nobles were simply ordered to set up establishments in the place chosen by the sovereign as his capital. Ancient Alexandria and mediæval Venice and Genoa, on the other hand, were cities based mainly on commerce, as are such modern cities as Liverpool, Hamburg, Rotterdam, Antwerp and New Orleans, to which might be added our own Vancouver.

(3) **Law and Order.**—The maintenance of law and order is a third primary requisite of the existence of great and civilized cities. When the law and order of a city cease to exist, its inhabitants either perish of starvation or migrate to the countryside where they may at least raise food for their own needs. In the Ancient World, cities declined and fell into ruins when their ruling dynasties were defeated and rendered incapable of providing food for their urban proletariates. Thus Babylon, Nineveh and Persepolis decayed. Again, upon the decline of the Roman Empire, such great cities as Rome itself, Antioch and Alexandria declined for the lack of a safe and secure food supply. In our own day, the populations of Leningrad and Moscow were greatly reduced after the War, until the Bolsheviks obtained a secure hold upon the food supplies of the peasants. Domestic peace is thus the prerequisite of the growth and the continued existence of the great cities of any nation, while international peace is the abiding interest of such a great world centre as London.

(4) **Mass Production and Specialization.**—In the last century and a half, larger agglomerations of population than any previously known in history have arisen throughout the white man's world (and also in Japan) in consequence of the progress of invention, bringing with it the increasing utilization of the powers of nature in the service of man, the rise of machine industry and the specialization of functions among human beings themselves. Thus at the end of the eighteenth century great cities grew where there was cheap coal for the development of power with which to drive machinery of the factories, and in our own day we find cities growing up where supplies of cheap electricity are available for operating factory machinery. These cities, once established, have continued to attract those persons whose specialized functions have

made it advisable for them to live in a densely populated area in order that they may be in the best possible position to assist those who need their services; for instance, a doctor who is a specialist finds it necessary to practice in a locality where he will have a sufficient number of patients needing the particular type of services which he is especially competent to render. This specialization of training and of function among human beings is a potent factor in promoting the growth of large cities, and in our own country has been responsible for the expatriation of many brilliant Canadians who have found it necessary to move to some such centre as Boston, New York, Chicago or London in order to secure an adequate field for their highly specialized talents.

Among the most notable phenomena of modern economic life is that multiplication of specialized occupations which is strongly impressed upon the attention of census-takers, as it adds greatly to the difficulty of comparing the occupational distribution of the people from decade to decade. This specialization of function is important in promoting the growth of urban population, since it is chiefly in cities that the more specialized person can find a market for his services. Broadly speaking, the occupational distribution of the rural population is comparatively simple; indeed, two-thirds of the "rural" population of Canada in 1931 were engaged in agricultural occupations. On the contrary, the different occupations followed in the cities are very numerous, increasing with the size of the city. Therefore, only the largest cities provide a market for the services of the most specialized workers.

PART B
THE GENERAL GROWTH OF RURAL AND
URBAN POPULATION

THE GROWTH OF URBAN POPULATION IN OTHER COUNTRIES

Introduction.—The growth of urban communities, as stated in Chapter I, is necessarily limited by the continuous secure food supply available for consumption on a limited area of ground. This in turn is dependent upon three factors—the degree of skill which has been attained in agricultural production, the stage of development of transportation facilities, and the maintenance of law and order requisite for the safe transport of food supplies from the country to the city as well as of the goods produced in the city and exchanged for food. Thus a certain degree of civilization and control over the powers of nature, and a settled government, are prerequisites of the growth of cities. Where these cease to exist, cities decline and are eventually lost and forgotten, as in India, Persia and Yucatan.

Without delving too deeply into past history, we may note that in ancient and mediæval times men generally lived close together for purposes of protection and defence. The ancient city was usually a walled town, whose inhabitants in time of peace cultivated the land outside the city walls, or drove their flocks and herds to pasture in the valleys of the neighbouring streams. As a further means of defence, the ancient city was usually "set upon a hill" or at least had its central citadel upon a hill, like the Acropolis of Athens or the Capitoline Hill at Rome.

The growth of such cities was conditioned by their facilities for importing food or producing it nearby. For the great Athens of the fifth century before Christ, the primary necessities of existence were the Athenian navy, which protected the supply of sea-borne grain, and the Long Walls, which connected the city with its port (the Peiræus) and which were impregnable to the Greek artillery of those days; therefore, when the Athenian navy was defeated in the Peloponnesian War, Athens surrendered as a matter of discretion, because she could no longer import food. Similarly, in the first century before Christ, the very existence of Rome as a powerful city was threatened by the pirates who infested the Mediterranean and obstructed the shipment of food supplies from Africa, so that in order to overcome the pirates Rome was obliged to hand over enormous powers of an unprecedented character to Pompey the Great; the result was that soon after the pirates were extirpated the rather disorderly Republic became the Roman Empire, with despotic power at its centre but peace throughout its wide extent except on its boundaries. The *pax Romana* thus favoured the growth of cities, and in addition to Rome itself, Antioch, Alexandria and subsequently Constantinople grew in the flourishing days of the Roman Empire to be comparable to any of the great cities that have existed in the modern world prior to the nineteenth century. Upon the fall of the Roman Empire, however, its cities declined in population, just as in our own time the great Russian cities declined when, under chaotic and anarchical conditions of life, their supplies of provisions failed to reach them and their people were either starved out or compelled to resort to the country districts for food.

While there had been world contacts and a considerable degree of world consciousness in Græco-Roman civilization, the society which succeeded it had a very narrow outlook, and this continued in mediæval Europe so far as the masses were concerned. The great bulk of the people lived in manorial villages and were "tied to the soil"; from its scanty products they supported their knight and their priest—the squire and the parson of the English village of to-day. The average English manorial village had perhaps 250 to 300 inhabitants. The men went out daily to work in the arable fields around the village or to cut hay on the meadowland for winter feeding, or they drove their cattle and sheep to graze on the permanent pasture land or their swine to feed in the forest. The manorial village was thus in the main a self-sufficient economic unit, exporting and importing little from any other community, and seldom interested in what was going on outside its own boundaries, except when its lord went away to war and had to be supported from home, or when the Pope demanded Peter's Pence, or when the village, if on or near the sea-coast, was sacked by the French. Life would continue as usual in one's own village even when a neighbouring village was destroyed—just as the destruction of a cell in an individual belonging to the low forms of biological life makes little or no difference to the neighbouring cells.

England and Wales.—The towns which existed in England in the reign of William the Conqueror are shown by Domesday Book to have been merely enlarged manorial villages which had grown because of some favouring circumstance—location on a good harbour, or at the intersection of two main highways, or at a ford or bridge, the names of Oxford and Cambridge being significant in this connection. The larger towns, which in many cases were royal manors, succeeded in purchasing from their lords charters granting their inhabitants relief from the ordinary feudal services, and thus became what were called “free” cities, while their original inhabitants, or those who could trace their descent from the original inhabitants, became “freemen”—a term which is still in use and confers certain valuable rights in various British and Continental European cities. When the House of Commons was constituted in the reign of Edward I, these free towns became “boroughs”, each of them sending two representatives to the House of Commons, which from the historical point of view is more correctly called “House of Communities—the *Domus Communitatum*”. From the thirteenth to the nineteenth century, till the First Reform Bill of 1832 to be exact, the “boroughs” elected the great majority of the Members of the House of Commons, the balance representing the shires, which were also *communitates*.

At the time of Domesday Book, toward the end of the eleventh century, the total population in some eighty recorded towns, together with the population of London, which was not included in Domesday Book as it comes down to us, was about 150,000, or probably about one-twelfth of the estimated population of England at that date. It is probable that from then until the present the proportion of the urban population of England to the total population has been fairly steadily on the increase as transportation facilities improved and law and order became more firmly established; probably there were interruptions at the time of the Black Death about 1349 and of the plague and the great fire of London of 1666. But the fact that no census was taken until 1801 and no division of the population into rural and urban was made until 1851 makes it impossible to carry the inquiry very far back except in so far as there are estimates of the population of London at various dates, which are given in the section of this chapter on the growth of that city.

The urban population of England and Wales has increased from 9,155,964 in 1851 to 20,895,504 in 1891 and to 31,948,166 in 1931, or from 51 p.c. of the total population in 1851 to 72 p.c. in 1891 and 80 p.c. in 1931. In the same two forty-year periods the rural population has declined from 8,771,645 or 49 p.c. of the total in 1851 to 8,107,021 or 28 p.c. in 1891 and to 7,999,765 or 20 p.c. in 1931. Thus there has been not only a relative but also an absolute decline in the rural population, implying enormous migration from the country districts to the urban communities during the eighty-year period.

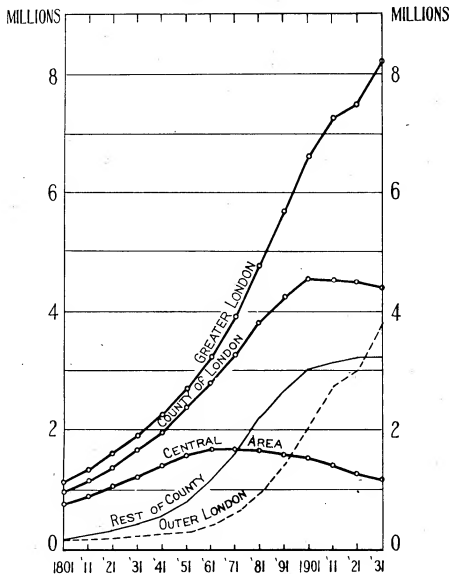
London.—London, which may be considered as typical of modern cities in its growth, was already an important commercial centre in the days of the Romans, but declined in early Anglo-Saxon times. It remained, however, the leading city of England, and after the Norman Conquest must have increased in population through the growth of commerce with the Continent. In 1199 the city had 40,000 inhabitants and 120 parish churches, according to a letter written by the then Archdeacon of London to Pope Innocent III. From this time until about 1500 the population of London, and indeed of England as a whole, appears to have shown little increase, which was doubtless due in part to the Black Death about the middle of the fourteenth century. After 1500, when the population of the city may have been 50,000, the growth was more rapid, and Creighton gives the following figures for certain subsequent dates, estimated on the basis of the bills of mortality:— 1532-5, 62,400; 1563, 93,276; 1580, 123,034; 1593-5, 152,478; 1605, 224,275; 1622, 272,207; 1634, 339,824; 1661, 460,000. At the end of the seventeenth century the population is given as 550,000 and in 1737 as 726,000.*

After 1500, the commerce of London greatly increased and the consequent call for young workers attracted from the rural districts many country boys, of whom the famous Dick Whittington is typical. Since this growth was considered as an evil, one Parliament after another passed acts restricting the growth of population and the building of houses, but such laws had the usual fate of legislation which is in opposition to the economic trend of the times, and London grew faster as time went on. At the first actual census of England and Wales in 1801, the population of the Administrative County of London was returned as 959,310, which had grown to 4,536,267 in 1901 but had declined to 4,397,003 in 1931.† However, the population of the whole area

* See Vol. XVI of the 13th Edition of the *Encyclopædia Britannica*, pp. 954-68, for a history of London. From “London Statistics, 1931-2”, Vol. XXXVI, p. 22, published by the London County Council.

(A)

POPULATION OF LONDON, ENGLAND

AT EACH DECENNIAL CENSUS
1801 TO 1931

Source:—"London Statistics, 1931-1932", Vol. XXXVI, p. 22, published by the London County Council.

known as 'Greater London,' including the Administrative County of London, together with many suburban communities, increased from 1,114,644 in 1801 to 6,581,402 in 1901 and to 8,203,942 in 1931*. Thus during the past generation, the population of 'Greater London' has increased, while that of the Administrative County of London has declined, a major cause of the "moving to the suburbs" having been the increase and improvement of transportation facilities. The same tendency will be found to exist in other great cities as the result of the advent of rapid motor transportation.

A diagram, illustrating the growth of the population of the central area of London, the County of London, and 'Greater London' from 1801 to 1931, is reproduced overleaf (Chart A).

Scotland.—The population of Scotland has shown in the past seventy years the same tendency toward the disproportionate increase of urban population and decrease of rural population that has been described for England and Wales. In the publications of the Census of 1931, Volume II contains a study of urban and rural population, the burghs with 1,000 persons or over being regarded as urban, and the smaller ones, many of which are very ancient, as rural. On this basis, the 1861 population already included 1,766,618 urbanites or 57.7 p.c. and 1,295,676 ruralites or 42.3 p.c. By 1891, the urban population was 70.6 p.c., by 1911, 75.4 p.c., by 1921, 77.3 p.c., and by 1931, 80.1 p.c. Thus at the latest census less than one-fifth of the population of Scotland can be described as rural. Indeed, the total number of rural residents enumerated at the census declined from 1,295,676 in 1861 fairly steadily to 963,010 in 1931.

United States.—In the colonies on the Atlantic seaboard which were afterwards to become the original United States, the population was from the beginning predominantly rural, and towns of any size were few and far between. Indeed, the rise of towns was discouraged by Imperial Acts, which forbade in the North American colonies the establishment of manufacturing industries that might compete with those of the Mother Country but which at the same time extended preferential treatment in the Mother Country to the raw products of the colonies. The colonies were supposed to confine themselves as far as possible to the production of primary products, and to exchange those primary products, on which they received a preference, for the manufactured products of Great Britain. Yet that very exchange promoted the rise of towns at the points of shipment, though such towns remained commercial rather than manufacturing centres; the chief ones were Boston, New York, Philadelphia, Baltimore and Charleston, the last being the largest centre in the South. Thus in 1698 the first census of the colony of New York gave to New York city a population of 4,937, while a census taken in Massachusetts in 1722 gave Boston a population of 10,567. The population of Philadelphia is estimated to have been 14,563 in 1753, that of Charleston 10,863 in 1770, and of Baltimore 5,934 in 1775 at the commencement of the War of Independence.

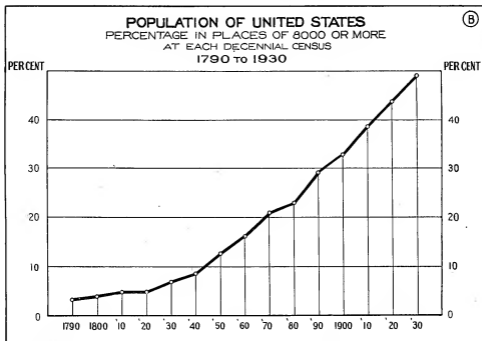
The first uniform census of the United States, taken in 1790, was necessitated by the adoption of the principle of representation by population in the American Constitution. That census showed that there were only six towns and cities with over 8,000 population—Philadelphia and suburbs with 42,444 people, New York (then confined to Manhattan Island) with 33,131, Boston with 18,038, Charleston with 16,359, Baltimore with 13,503 and Salem with 7,921†. The total urban population, as thus defined, was 131,472 or 3.3 p.c. of the grand total of 3,929,214. On this basis only 1 in every 30 of the population of the United States was an urban resident. By 1800 the proportion of urban population resident in towns and cities of 8,000 or more rose to 1 in 25, and by 1810 practically to 1 in 20—a ratio which persisted in 1820, when thirteen towns and cities of 8,000 and over had 475,135 people out of a total population of 9,638,453. By 1830 the proportion of population in cities and towns of 8,000 and over rose to 1 in 16, by 1840 to 1 in 12, and by 1850 to 1 in 8, when 85 cities and towns with 8,000 people or over had an aggregate population of 2,897,586 out of a grand total population of 23,191,876.

At the Census of 1860, just before the outbreak of the Civil War, the population in cities and towns of 8,000 and over, which were nearly all located in the Northern States, was almost one-sixth of the total or 5,072,256 out of 31,443,321. In 1870 it was 8,072,000 out of a total of 38,555,800 or 20.9 p.c., rising to 11,366,000 out of a total of 50,156,000 in 1880 or 22.7 p.c. A great increase, both absolute and relative, was shown in 1890, when 445 cities and towns of 8,000 and over had an aggregate population of 18,244,000 or 29.0 p.c. of the total of 62,948,000. At

* See footnote † on p. 458.

† Salem, though its population was 79 short of the 8,000 minimum in 1790, has always been counted as one of the six cities of 8,000 and over at that date.

the end of the century the population in cities and towns of 8,000 and over numbered 25,018,000 out of an aggregate of 75,995,000 or 32.9 p.c. (almost one-third). In 1910 the proportion showed a further increase to 38.7 p.c. or 35,570,000 out of 91,972,000, while in 1920 it was 43.8 p.c. or 46,308,000 out of 105,711,000. Finally, in 1930 the urban population resident in 1,208 cities and towns of 8,000 and over aggregated 60,333,000 or 49.1 p.c. (almost one-half) of the total population of 122,775,000. The figures of the increase of United States urban population resident in cities of 8,000 and over in the 140 years between 1790 and 1930 are presented in Table 1 and depicted in Chart B.



See Table 1

TABLE 1.—POPULATION IN PLACES OF 8,000 INHABITANTS OR MORE IN THE UNITED STATES, AT EACH DECENNIAL CENSUS, 1790-1930⁽¹⁾

Census year	Total Population	Places of 8,000 Inhabitants or More		
		Population	Number of Places	P.C. of Total Population
1790.....	3,929,214	131,472	6	3.3
1800.....	5,308,483	210,873	6	4.0
1810.....	7,239,881	356,920	11	4.9
1820.....	9,638,453	475,135	13	4.9
1830.....	12,866,020	894,509	26	6.7
1840.....	17,069,453	1,455,994	44	8.5
1850.....	23,191,876	2,897,596	85	12.5
1860.....	31,443,321	5,072,266	141	16.1
1870.....	38,558,371	8,071,875	226	20.9
1880.....	50,155,783	11,365,698	285	22.7
1890.....	62,947,714	18,244,239	445	29.0
1900.....	75,984,575	25,018,335	547	32.9
1910.....	91,972,366	35,570,334	708	38.7
1920.....	105,710,629	46,307,640	924	43.8
1930.....	122,775,046	60,333,462	1,208	49.1

⁽¹⁾ Source: United States Census, 1930, Vol. I, p. 9

New York City.—The City of New York is the commercial metropolis of the United States as London is of England, and its growth may be taken to represent that of the urban communities of this continent at their maximum. Founded as New Amsterdam about 1626, the town had by 1656 a population of 1,000, and in 1698 the first census of the colony of New York gave it a population of 4,937. By the middle of the eighteenth century (1749), it had grown to 13,294, and in 1790 the population of the city proper, situated on Manhattan Island, was 33,131, as already stated, while in the same year the population of the territory now comprised in the five boroughs of New York City was 49,401. By 1800 the population of the latter area was approximately 80,000; in 1810, 120,000; in 1820, 152,000; in 1830, 242,000; in 1840, 391,000; in 1850, 696,000; in 1860, 1,175,000; in 1870, 1,478,000; in 1880, 1,912,000; in 1890, 2,507,000; in 1900, 3,437,000; in 1910, 4,767,000; in 1920, 5,620,000; in 1930, 6,930,000.

The population of the City of New York, however, is much less than that of the greater district in which so many of the City's workers and their dependents reside. The question of suburban areas and how far they may be included with the central nucleus in metropolitan districts is a difficult point in these days of rapid transportation by motor car and omnibus, and electric and special steam railways for "commuters". In an attempt to meet this situation, the United States Census Bureau, after the Census of 1930, arranged for separate compilations for metropolitan districts, including "in addition to the central city or cities, all adjacent and contiguous civil divisions having a density of not less than 150 inhabitants per square mile and also as a rule those civil divisions of less density that are *directly* contiguous to the central cities or are entirely or nearly surrounded by minor civil divisions that have the required density".* Applying the above definition to the suburban areas surrounding New York City, the United States Census Bureau included in the metropolitan district of New York City a total land area of just over 2,514 square miles in the three States of New York, New Jersey and Connecticut. This area had in 1920 a population of 8,505,404, which had increased to 10,901,424 in 1930. While this population is considerably larger than that of 'Greater London,' it may be pointed out that the largest area included in the latter is given as about 653 square miles, or not much more than one-quarter the area included in the metropolitan district of New York which the United States Census Bureau designates "New York-Northeastern New Jersey Metropolitan District".

Germany.—In Germany, too, there was a great growth of urban population following upon the establishment of the German Empire in 1871; this increasing urban population imported from abroad immense quantities of food stuffs and raw materials and exported finished goods to every quarter of the world, thereby competing with the manufactured products of the United Kingdom and the United States, the other two chief exporters of manufactured goods.

In Germany the population is divided by the census authorities into "rural" communities of less than 2,000 population, small and medium-sized towns and cities of from 2,000 to 100,000 and great cities of over 100,000 population. Between 1875 and 1933†, the aggregate population of the communities with less than 2,000 declined from 26.1 to 21.5 million persons, while that of the smaller towns and cities increased from 14.0 to 23.5 million and of the larger cities of over 100,000 people from 2.7 to 19.7 million. Thus the "ruralites" declined from 60.9 p.c. to 33.0 p.c. of the population, while the smaller town and city dwellers increased from 32.8 p.c. to 36.8 p.c. and the residents of large cities increased from 6.3 p.c. to 30.2 p.c. of the total population.

The growth of Berlin into one of the great cities of the world may be considered typical of the urbanization of German community life. In the eighteenth century, Berlin was still a comparatively small town and in 1816, at the end of the Napoleonic wars, it had a population of 198,000, but by 1871 this figure had been quadrupled, having reached 826,000. In the next thirty years it had more than doubled its population, attaining 1,888,000 in 1900. By 1925 it had again doubled, the census of that year reporting 4,024,000 inhabitants, and a further increase to 4,236,000 was recorded by the Census of June 16, 1933. The comparatively small increase in recent years appears to have been due to the same causes that are responsible for the decline in the population of Central London and Manhattan Island, *viz.*, the increased facilities of cheap and rapid transportation and the growing desire of those who work in the city to have their homes in its suburbs.

* It may be observed that in the densely settled countries of Europe and Asia, a population of 150 to the square mile by no means implies that that population depends upon urban occupations for livelihood.

† The 1933 figures do not include population ceded by Germany as a result of the Great War.

Other Countries of the Western Civilization.—The same growth of urban population to which attention has been called in the case of England and Wales, the United States and Germany, has taken place within the last century and particularly within the last generation in other countries of the white man's world.* Everywhere the percentage of population living in urban communities has shown increase and the rate of increase has generally been the more rapid in proportion to the size of the city. Indeed the larger cities, more especially when considered as economic rather than local units, have shown the most rapid rates of growth of any and have drawn to themselves the most specialized persons in this day of specialization of function. The aggregation of population has tended to draw to itself more population, like the proverbial snowball.

Japan.—The enormous growth of urban population is not peculiar to the Western world. The same causes which have led to its growth there have also produced a growth of urban population wherever the same economic system has been accepted. Thus in Japan, which was first opened up to the white man's influence in 1858 and which overthrew the old mediæval system of government about 1870, there has been a whole-hearted acceptance of the capitalistic system of industry and of the use of machinery in production. The result has been an enormous growth in the cities, particularly in Tokyo and Osaka. While in 1879 there were 250,000 households in Tokyo with a total population of 825,000, the national Census of October 1, 1930, showed 414,000 households with a population of 2,071,000. This, however, is far from representing the full growth of the Japanese metropolis. On October 1, 1932, eighty-two suburban towns and villages were absorbed into the new city of 'Greater Tokyo', thereby giving it a total population of 4,971,000 as at the national Census of 1930; it is now considerably over 5,000,000, so that Tokyo is well established as one of the greatest cities of the world in spite of its devastation by earthquake and conflagrations in 1923.

India.—The introduction of Western industrial methods in India has produced somewhat the same results as it has in Japan. In recent years the factory system of industry has to a considerable extent replaced the old Indian trades with the result that urban population, though as yet a comparatively small part of the total, has increased in recent decades proportionately much more rapidly than the rural. In 1931 the aggregate urban population was 38,985,000 or 11.0 p.c. of the total population as compared with 10.2 p.c. in 1921 and 9.4 p.c. in 1911. This increase of urban population springs from the increasing diversification of functions, which is most desirable in a great country like India where the population has in the past been too exclusively agricultural and therefore subject to great privations whenever the rainfall was deficient.

Summary and Conclusion.—The experience of certain countries in respect of the growth of urban population has been briefly reviewed in order that a proper orientation might be given to the consideration of the Canadian problem of urban growth. The urban population of the Dominion between 1901 and 1931 grew by 177 p.c., while the rural in the same thirty years grew by only 43 p.c. At the present time it is widely believed that, for a country whose general population density is only 3 to the square mile, Canada has too large an urban population, approximately 28 p.c. or nearly two-sevenths of its 1931 population residing in the seven leading cities, including suburbs. There is much to be said in support of the contention that, in view of our vast almost empty spaces, we are over-urbanized, but it should also be remembered that the history of civilization is very largely the history of great cities and that new and distinct types of culture and new nationalities are developed where the more original minds of a country are able to meet and exchange ideas.

*See *Economic Essays in Honour of Gustav Cassel*, pp. 435-57, article entitled "Industrialization and Population" by Professor Gunnar Myrdal, University of Stockholm, Sweden.

CHAPTER III

THE GROWTH OF RURAL AND URBAN POPULATION IN CANADA UP TO 1851

The Early Settlements.—The original settlements in Canada and along that part of the Atlantic seaboard which is now the United States were made in the first half of the seventeenth century, and since this was a period of political and religious warfare in Europe, the early colonists had been trained to the use of arms. When they reached the new world, they found themselves very generally faced by the hostility of the Indian tribes whose hunting grounds they were taking over, and the first century of settlement was a period of struggle against these tribes, in the course of which thousands of lives were sacrificed. This meant that the early settlers of Canada were forced to live close together for purposes of protection and mutual support. When the seigneuries of French Canada were established on both sides of the St. Lawrence river between Montreal and Quebec, the seigneur had to establish at the centre of his small domain on the river bank a fortified place which would serve as a refuge in case of an attack by the Indians, such as is recorded in the early life of Madcleine de Verchères. From this necessity of protection arose the riverside villages and the close settlements of the French Canada of to-day, while more important aggregations of populations settled from the earliest times at Quebec, Three Rivers and Montreal, which were founded respectively in 1608, 1634 and 1642. When the first census of New France was taken in 1665 and 1666, the settlement which is now Quebec City contained 547 people, while Three Rivers and its suburbs showed a population of 455 and Montreal and its suburbs 625, these three settlements having between them more than one-half the total population of the colony, *viz.*, 3,215 persons.

Then followed a period of colonization owing to the foresight and the energy of Colbert in France and Talon in Canada. By 1681 the population of the colony had trebled, reaching 9,677, of which Quebec had 1,345 and the Island of Montreal 1,418. In the following years, the French colony grew mainly by natural increase. In 1698 the total French population was 13,815, which, together with 1,540 civilized Indians, gave a grand total of 15,355, of whom Quebec had 1,988 and Ville-Marie (Montreal) 1,185. In the Census of 1706 Quebec was credited with 1,771 and Montreal and its suburbs with 2,025 out of a total population of 16,417. In 1739 Quebec and its suburbs had 4,603 and Montreal and its suburbs 4,210 out of an aggregate population of 42,701, and the Census of 1754, the last taken under the French *régime*, shows Quebec as having a population of 8,001, Montreal 4,000 and Three Rivers 808, out of a grand total of 55,009 in the colony. Thereafter, the disturbed conditions in the colony prevented the taking of a census until after the conquest and the final surrender of the colony to the British.

The next census, taken in 1765 by the British authorities after the cession, gave Quebec a population of 8,967 and Montreal 5,733, out of a total population of 69,810 in the colony as a whole, so that Quebec was still a much larger place than Montreal. Quebec continued to be the centre of the colony and Montreal its western outpost. The Lachine rapids, interrupting navigation on the St. Lawrence river, marked the western limit of the area of settlement as contrasted with the much greater areas occupied only by the Indians and visited by the fur traders.

Expansion in Upper and Lower Canada.—The coming of the United Empire Loyalists after the American War of Independence and their settlement in the Eastern Townships and along the Upper St. Lawrence and Lake Ontario and on the Niagara Peninsula shifted the centre of the inhabited area of the colony; Montreal was now the heart of the settlement, as was soon reflected in the growth of its population. Thus at the Census of 1790, Montreal, which had now received a considerable reinforcement of English-speaking people, had a population of approximately 18,000, as compared with 14,000 in Quebec; the grand total population in the colony was 161,311, exclusive of that in what is now Ontario, which was probably between 25,000 and 30,000 at this date. Henceforth the population of the new western districts, through immigration supplemented by natural increase, grew at a much more rapid rate than that of French Canada;

consequently, Montreal being nearer these new districts, grew more rapidly than Quebec. The two cities, however, continued to be for the next half century rival commercial rather than manufacturing centres, where the chief people in business were the importers and the exporters and others concerned in carrying on and financing the import and the export trade. It was no mere coincidence that the Banks of Montreal and Quebec were founded respectively in 1817 and 1818 with the object of financing the trade chiefly between Canada and the Mother Country.

The foreign trade in these early days, excluding furs, was, however, an extremely small percentage of total production. In the main the pioneer settlers of Upper Canada and the French habitants of Lower Canada lived on what they themselves produced, providing their own food, clothing, shelter and fuel. Lumber, wheat, furs and potash were shipped year by year to Great Britain during the season of navigation. The luxuries of those days, fine textiles, tea, coffee, etc., were imported into Montreal by ship; those for western points were then conveyed up the St. Lawrence over the many portages or through the small canals, finally reaching the consumers in what is now Ontario. Thus by 1825, when Lower Canada had a census population of 479,288, Montreal City had grown to 31,516 and Quebec City to 22,101, though Three Rivers remained far behind with 2,908. In the same year Upper Canada had a total population of 157,923, of which York, the capital, had only 1,677 or a little more than 1 p.c.

Upper Canada was now the most rapidly growing part of the country and although every settler in these new parts meant additional traffic for the port of Montreal, centres of distribution began to rise in Upper Canada itself. While the immigration of half-pay officers and soldiers after the battle of Waterloo gave a great impetus to the population of Upper Canada between 1815 and 1825, the 30's brought much greater immigration, which was stimulated by the enormous growth of population and the scarcity and dearness of food in the British Isles and especially in Ireland during this period. By 1834 the population of Upper Canada had doubled, totalling 321,145, while the town of York, incorporated in that year as the City of Toronto, had 9,252. By 1841, the year when the Act of Union went into effect, Upper Canada had 455,688 population, while its single city, Toronto, had increased to 14,249.

Meanwhile, Lower Canada, with its high rate of natural increase, was also growing rapidly, and Montreal in particular was reaping the benefits of the increase of settlement to the West. The total population of Lower Canada, which was 697,084 at the Census of 1844, had increased to 890,261 by the Census of 1851-2, while by the same date Upper Canada had for the first time passed Lower Canada with a population of 952,004. At this census Montreal had a population of 57,715, Quebec 42,052 and Toronto 30,775. In the same year, Hamilton, which had now reached the dignity of a city, had 14,112 and Kingston 11,697.

The year 1851 marks the beginning of the regular decennial census of this country, although the First Decennial Census of the Dominion of Canada was, of course, not taken until 1871. However, fairly complete figures, giving for eighty years the population of the areas now included in the Dominion, are available. Indeed, the year is really a transition date in the history of Canada. Before this time the waterways were the chief means of communication and the few short railways, which existed in the neighbourhood of Montreal and totalled some 66 miles in all, were merely portage lines.* Transportation generally was slow and expensive and the main water routes were closed by ice during the five winter months, so that the St. Lawrence colony during this period was isolated and its residents had to depend during the winter upon United States routes and upon the ports of New York and Boston for transportation to Great Britain or the continent of Europe.

Summary for Canada.—Throughout the whole of the period of settlement which has been described, the urban population for the most part bore a comparatively small proportion to the total population of the country and the few cities were mainly distributing or trading centres rather than manufacturing communities, though the flour mills of Montreal and some other forms of industrial plants were in operation in the 1830's and 1840's. Generally speaking, however, the habitant communities of Lower Canada and the pioneer settlements of Upper Canada were economically fairly self-sufficient, the latter in particular being necessarily so, on account of the great distances from market, the high cost of transportation and the seasonal and

* There was also in operation in Nova Scotia about 1838 a railway line six miles long running from Stellarton to Abercrombie on the East river which emptied into Pictou harbour; it was used for the carriage of coal from the mines to the harbour. This line was at first operated by horses, for which a locomotive was substituted in the spring of 1839. Passengers were also carried.

other interruptions in the service. Wherever people produce on their own farms nearly all the food and clothing which they consume, and have little trade with the outside world, there is not much opportunity for the establishment or growth of large manufacturing or even commercial cities.

The towns and villages that did arise in Upper Canada in this period contained a few merchants, a few artisans who for the most part worked to order for the nearby farmers of their own community, usually a doctor, a teacher, a parson and any local representatives of the government. The village of Port Sarnia, for example, is recorded in Smith's "Canada Past, Present and Future" as having at about 1850 eight merchants, one pumpmaker and boatbuilder, one merchant who was also the postmaster, one or more operators of the steam sawmill, one tanner, one iron and brass founder, one merchant who was also a life insurance agent, one county registrar, one doctor, one collector of customs and one hotel keeper. Doubtless in an inland community there would have been fewer merchants.

In this period what manufacturing was done was local work for local demand; many little woollen mills and flour mills took advantage of the water power on the small rivers. In the next decade or two the advent of the railway was to transfer trade and manufacturing from the smaller to the larger centres, thereby stimulating a much greater growth of urban population. The protective tariff adopted by the Canadian Legislature about 1858 also contributed to the growth of the larger urban communities by promoting the rise of manufactures.

Expansion in the Maritimes.—While settlement and the rise of towns was proceeding in the St. Lawrence valley in the manner described, the Maritime Provinces and their urban communities were also growing in population and importance. Halifax was founded in 1749 and in the same year the French population of Acadia was stated as 13,000, of Ile Royal (Cape Breton Island) 1,000, of what is now New Brunswick 1,000 and of Saint John Island (Prince Edward Island) 1,000. In 1762 the British population of Nova Scotia was given as 8,104, of whom 2,500 were in Halifax town and 1,400 (mainly Hanoverians) in Lunenburg.

From the beginning, however, the barrenness of the rocky Atlantic coast of Nova Scotia drove many of its inhabitants to the seas to seek their livelihood, and Halifax prospered as a shipping port and fishing centre rather than as a distributing point for agricultural products from the lands in its neighbourhood. The Saint John valley in New Brunswick, settled by the United Empire Loyalists in 1783, was more fertile territory, as was also the Bay of Fundy coast of Nova Scotia, where the earliest permanent settlement on this continent north of Florida had been established in 1605 as Port Royal, which was re-named Annapolis after its capture by the British in 1708. Halifax prospered on account of its privateering business and the expenditure of British Government moneys during the war of 1812, and by 1827 the "peninsula" of Halifax (so-called in the census) had 14,439 population out of 123,630 in the whole province of Nova Scotia, while Saint John in 1824 had 8,488 population out of a total of 74,176 in New Brunswick. In 1834 Saint John had 12,073 out of 119,457 in New Brunswick and in 1838 Halifax had 14,148 out of a total of 202,575 in the colony of Nova Scotia. By 1840 Saint John accounted for 19,281 out of the 156,162 in New Brunswick. In 1851 Halifax had risen to 20,749 out of a total of 276,854 in Nova Scotia, while Saint John had 22,745 out of a total of 193,800. These two cities were the only large urban centres in their respective provinces, though Fredericton had a population of 4,458 in 1851.

As for the almost purely agricultural province of Prince Edward Island, we find that its capital and only important town, Charlottetown, had in 1841, 3,896 out of a total population of 47,042 in the colony; by 1848 this had increased to 4,717 out of a total of 62,678.

Summary for the Maritimes.—In the Maritime colonies, as well as in the St. Lawrence valley, the urban communities during this early period up to 1851 were much less important in relation to the total population than they are to-day. Nevertheless, the urban proportion of the total in the St. Lawrence colonies was smaller than in the various colonies of the Maritimes. Possibly this may be attributed to the fact that the latter contained important shipping centres and that the breadwinners who supported a large part of the population derived their sustenance from the sea rather than from the land.

CHAPTER IV

THE GROWTH OF RURAL AND URBAN POPULATION IN CANADA, 1851 TO 1931

Two Censuses before Confederation.—The decade beginning 1850 constitutes a transition period in the economic history of Canada. Transportation in the St. Lawrence valley was immensely improved during this period by the construction of the Grand Trunk Railway, which tied together the two provinces of Upper and Lower Canada economically, as the Act of Union had tied them together politically. Speed of communication was greatly increased by the introduction of railways as well as by the telegraph systems which were first established about this time. These improvements in transportation and communication tended to favour the expansion of the larger communities at the expense of the smaller, thereby "switching" trade to the larger centres and "side-tracking" the little local sea or lake ports from which the products of their localities had previously been shipped.

With this speeding up of transportation and communication there arose in the most populous parts a feeling that Canada should produce more of her own manufactured goods instead of relying on imports from Great Britain and the United States. The infant industries would need protection, so toward the end of the decade, 1858-9, Canada inaugurated tariffs of a distinctly protectionist character, thereby promoting the rise of Canadian factory industry which in turn stimulated the growth of urban population.

While the Province of Canada was commencing to pursue the policy of protection which favoured the growth of industrial communities, the provinces on the seaboard remained wedded in general to the policy of tariff for revenue only, and their larger towns continued to be, for the most part, commercial rather than manufacturing centres, although in this period they excelled in the art of shipbuilding. Wooden ships built in the port towns of New Brunswick and Nova Scotia were found on every sea and were manned largely by New Brunswickers and Nova Scotians.

In the Census of 1851-2 we have for the first time fairly complete figures for the areas which now constitute the Dominion of Canada; these were secured at nearly the same time although it is necessary to use the 1848 figure for Prince Edward Island. On this basis the total population of the territories now included in the Dominion was probably about 2,450,000, while the population of the urban communities with a population of 5,000 and over was 223,840, or rather more than 9 p.c. of the aggregate. Of such communities there were only ten in the whole country, the three largest being Montreal with a population of 57,715, Quebec with 42,052 and Toronto with 30,775. Medium-sized places were Saint John with 22,745 and Halifax with 20,749. Hamilton with 14,112 and Kingston with 11,697 were next in order. Portland (N.B.) with 9,200, Ottawa (then Bytown) with 7,760 and London with 7,035 completed the list of communities with over 5,000 population. If Portland, which was a residential suburb of Saint John, had been included with its parent city in 1851, the latter would have exceeded Toronto by 1,170, and there would then have been only nine communities of 5,000 and over in the area that is now the Dominion of Canada.

While in 1851 only about one-eleventh of the population of Canada resided in cities and towns of 5,000 and over, the proportion in 1861 had increased to more than one-ninth; the total number of such communities had increased to eighteen and the number of their residents had risen from 223,840 to 366,177. Montreal had now advanced to 90,323 and Quebec had almost touched the 60,000 mark, while Toronto had 44,821, Saint John and Portland 39,317, Halifax 25,026 and Hamilton 19,096. Ottawa, now selected for the capital of the Province of Canada, had increased to 14,669. Meanwhile Kingston had risen to 13,743 and London to 11,555. Besides these cities, all of which were mentioned in the last paragraph, there were now the following communities of 5,000 and upwards,—Charlottetown 6,706, Fredericton 5,652, Three Rivers 6,058, Lewis 5,333, St. Catharines 6,284, Belleville 6,277, Brantford 6,251 and Guelph 5,076. Thus several of the important smaller cities of to-day had reached the 5,000 mark between 1851 and 1861, the total number of places with over 5,000 souls having nearly doubled in those ten years.

First Decennial Census of the Dominion, 1871.—By 1871 the scattered provinces had for the most part been consolidated, on paper at least, into the great Dominion. The census of that year, the first of the seven for the Dominion, covered only the four original provinces, *viz.*, Nova Scotia, New Brunswick, Quebec and Ontario, but the figures of the Manitoba census of the preceding fall, taken by Dominion Government authority, may be added, as also the figures of the colonial censuses for British Columbia in 1870 and Prince Edward Island in 1871.

These censuses of 1871 showed that the number of communities of 5,000 and over had further increased to 22, or rather 21 exclusive of Charlottetown, since Prince Edward Island was not to be a part of the Dominion until 1873. Among the new communities which had now secured the considerable population of over 5,000 were Yarmouth in Nova Scotia, Sorel in Quebec, and Chatham, Port Hope and Brockville in Ontario. Meanwhile the population of Montreal and its incorporated suburbs had risen to 114,909 and that of Toronto to 56,092, while Quebec remained stationary at 59,699. Saint John with Portland had 41,325 and Halifax 29,582. Hamilton, too, had increased to 26,716 and Ottawa to 21,545, while London had only 12,407. The total increase in the urban population in communities of 5,000 and over in this ten-year period, however, was only about 90,000, the grand total having been 458,119 as compared with 366,177 ten years earlier. Only 1 out of every 8 Canadians lived in a community of 5,000 and over in 1871 and the most westerly town of over 5,000 people was Chatham, Ontario, Windsor having had but 4,253 and Goderich 3,982. Except for Victoria, which had an 1870 population of 3,270, urban Canada may be said to have ended in those times at the shores of lake Huron.

Last Three Decades of the Nineteenth Century.—The Second Decennial Census of the Dominion was taken in 1881 and showed a considerable increase both in the total and in the urban population, perhaps the most striking change being that the West had now commenced to contribute to the urban population in communities of 5,000 and over. Most remarkable of all was Winnipeg, which from only 241 people according to the Census of 1870 had increased to 7,985 or almost to the 8,000 mark. Again, on the Pacific coast the island capital, Victoria, had risen from 3,270 to 5,925. Thus urban Canada was for the first time represented in the West. The total number of cities and towns with over 5,000 people had increased to at least thirty-four and their aggregate population to over 688,000 or about 50 p. c. in the decade.

In the Maritimes, the cities and towns with over 5,000 in 1881 included Charlottetown 11,485, Halifax 36,100, Saint John (with Portland) 41,353, Fredericton 6,218 and Moncton 5,032. Further west, Montreal had now risen to 140,747—it is included in the first Statistical Abstract and Record of Canada of 1885 (now the Canada Year Book) at 169,610. Quebec stood at 62,446, Sherbrooke 7,227, St. Hyacinthe 5,321, Levis 7,597 and Sorel 5,791. Toronto had increased to 86,415, or with the town of Yorkville to 91,240. Hamilton had 35,961, Ottawa 27,412, Kingston 14,091, Guelph 9,890, St. Catharines 9,631, Brantford 9,616 and Belleville 9,516. In Western Ontario, London with East London had 23,636. The towns of over 5,000 were Brockville, Peterborough, Port Hope, Lindsay, Chatham, Galt, St. Thomas, Windsor, Woodstock and Stratford, and there were also many smaller towns. The total urban population for all cities, towns and villages of Ontario was recorded as 440,405.

Thus in the decade from 1871 to 1881, the urban population grew very much more rapidly than the rural. Indeed, taking as our dividing line between rural and urban the existence of an urban municipality organized under the laws of its particular province, as is the procedure in the Dominion census reports, the total urban population of Canada increased from 722,343 in 1871 to 1,109,507 in 1881, or from 19.58 p. c. to 25.65 p. c. of the aggregate population of the Dominion. Meanwhile the rural population had grown from 2,966,914 to 3,215,303. Doubtless the main factors in producing the growth of urban population and the disproportionately large growth of the leading cities were the expansion of manufacturing industries and the increasing ease of communication owing to the building of railways.

In the following decade, 1881 to 1891, the growth of the Dominion was relatively slow, the total increase being only some 508,400. Of this increase, less than 81,000 was due to the growth of rural population and about 428,000 to urban population, as ordinarily defined; the urban had risen to nearly 32 p. c. of the total. By 1891 Montreal had grown to 219,616 and Toronto to 181,215. Meanwhile, Winnipeg had advanced to 25,639, Vancouver had risen from nothing in 1886 to 13,709, New Westminster from 1,500 in 1881 to 6,700, and Victoria from 5,900 to almost 17,000. Towns were rising on the plains, Calgary having 3,876, Brandon 3,778 and Portage la Prairie 1,872. Hamilton had now practically 49,000 people, Ottawa 44,000 and London

32,000, while smaller towns in Ontario were showing gradual growth. Dartmouth, N.S., having climbed from 3,800 to 6,300, had entered the 5,000 and over group for the first time and the total in that group had now increased to at least 44.

The tendency toward a more rapid increase in urban than in rural population, outlined in the preceding paragraphs, was already officially recognized in Canada in the last decades of the nineteenth century and special reference was made to it in the Statistical Year Book of Canada for 1892 at page 101, as follows: "The growth of the urban at the expense of the rural population is one of the features of the present age throughout the world, and it is evident . . . that the movement prevails in Canada as well as elsewhere."

The Fourth Census of Canada, 1901, showed relatively slow growth like its predecessor. The total increase of the decade was only 538,000, to which the rural population contributed merely 61,000 and the urban population 477,000, bringing the urban population, as usually defined, up to three-eighths of the total population of the country or 37.50 p.c. Of the total urban population of 2,014,000, Montreal had 328,000 and Toronto about 210,000, while Quebec was third with 69,000 and Ottawa fourth with 60,000. Hamilton had nearly 53,000, Winnipeg over 42,000 and Halifax and Saint John about 41,000 each. In the far West, Vancouver had 29,000 as compared with Victoria's 21,000, and Edmonton, now reached by the railway, had commenced her rivalry with Calgary, each of them having between 4,000 and 5,000 people.

Rapid Growth in the Twentieth Century.—The Census of 1911 showed a numerical increase in population over 1901 more than equal to that of the three preceding decades combined, the aggregate increase being 1,835,000. The rural population, which had grown but little since 1881, now showed an increase of 577,000 in the decade, almost wholly in the Western provinces where a new empire of arable land had been staked out and partially occupied. Even so, however, the growth of the urban population of Canada in this decade was over 1,258,000 or more than double that of the rural, with the result that 45.42 p.c. of the total population of 1911 was classified as urban. To this urban growth of one and a quarter million, Montreal contributed over 160,000 and was now nearing the half million mark, while Toronto, with almost 382,000 people, rose nearly 82 p.c. The two important Western cities, Winnipeg and Vancouver, also showed enormous gains, the former reaching 136,000 and the latter 121,000, so that Canada now had four cities of over 100,000 people. Meanwhile, in the most rapidly growing area, Calgary increased its population tenfold, reaching nearly 44,000, and Edmonton had 31,000, while Regina, which showed only 2,200 people in 1901, recorded 30,000 in 1911 and Saskatoon, which registered merely 113 in the former year, had now soared to 12,000. At the head of the lakes, Fort William, which was a relatively small town of 3,600 people in 1901, had 16,500 in 1911, and its twin city of Port Arthur grew from 3,200 to 11,220 in the same period. By 1911, therefore, the larger cities of Canada, as they exist to-day, were well on the way toward their present status.

The Sixth Census, 1921, registered further growth in the urban population. Of a total growth of 1,581,000, the rural communities absorbed 502,000, or less than one-third, and the urban communities about 1,079,000, or more than two-thirds, the city, town and village population now representing close to one-half of the total population. Montreal had now surpassed 600,000 by a good margin and Toronto had exceeded by several thousand the half million mark, while Winnipeg had 179,000 and Vancouver 163,000. Hamilton and Ottawa were well over 100,000, and Quebec was not far from it with 95,000 people. Calgary was a little above 60,000 and Edmonton a little below it; London had just passed that mark and Halifax was near it. While almost all the larger urban communities were showing steady growth, Windsor, which had now become the centre of the automobile trade, had jumped from 17,800 to 38,600 in this decade and the Northern Ontario cities of Sault Ste. Marie, Sudbury and North Bay had also shown rather rapid increase.

The Seventh Decennial Census of Canada, taken in 1931, showed a still further drift to the urban communities. Of a total gain of 1,588,837 in the population, the rural communities accounted for only 368,901, while the urban communities, as usually defined, showed a gain of 1,219,936, or more than three-quarters of the total increase. The three leading cities within their municipal areas, Montreal, Toronto and Vancouver, recorded a total increase considerably greater than that of all the rural communities combined. Montreal with a gain of approximately 200,000 reached a total of 818,577, and Toronto with a gain of nearly 110,000 had a population of 631,207. Vancouver, by the annexation of South Vancouver and Point Grey in this decade, replaced Winnipeg as the third city of the Dominion, having attained a population of 246,593, while Winnipeg followed with 218,785. Hamilton increased to 155,547 and Quebec to 130,594,

while Ottawa, which had been in 1921 the sixth city of Canada, was displaced by Quebec, since the capital could only muster 126,872 resident population. Calgary and Edmonton were still rivals, the former with 83,761 population and the latter with 79,197. London increased to 71,000 and Windsor to 63,000; if the adjacent city of East Windsor and town of Riverside and the contiguous towns of Sandwich and Walkerville were added to Windsor, the Border Cities with a population of 102,611 would constitute the eighth urban community in Canada, its growth having been largely due to the establishment of the Canadian automobile industry in these places. Verdun, which is really a suburb of Montreal, increased from 25,000 to over 60,000 in the same decade, and Regina, adding over 50 p.c. to its 1921 population, joined Halifax in the 50,000 to 60,000 class. Saint John had 47,500 people and Saskatoon recorded over 43,000.

In the East the Census of 1931 recorded some notable gains among the smaller cities, Three Rivers increasing from 22,400 to 35,500 and Oshawa, largely on account of its automobile industry, from 12,000 to 23,400. The cities of Northern Ontario also showed considerable gains owing in large measure to the rise of the mining industry. Thus Sudbury increased from 8,600 to 18,500 and North Bay from 10,700 to 15,500, Timmins from 3,800 to 14,200, Fort William from 20,500 to 26,300 and Port Arthur from 14,900 to 19,800, these increases indicating that the course of expansion of the Dominion is northward as well as westward.

Altogether in 1931 there were 138 cities and towns in Canada with 5,000 people and over as compared with 109 in 1921, 87 in 1911 and 57 at the beginning of the twentieth century. Of a total growth of nearly 5,006,000 in the aggregate population in the thirty years between 1901 and 1931, 1,448,000 represented the total addition to the rural population and 3,558,000 the gain in the urban. Again, since the urban population was so much smaller than the rural at the beginning of the century, the relative gain of the urban was still more disproportionate than the absolute. During the thirty years from 1901 to 1931, the rural population grew by 43 p.c. and the urban by 177 p.c. The foregoing growth of the rural population (1,448,000) was due in the main to the increases in the Prairie Provinces, which accounted for about 1,152,000; the increase in British Columbia was 211,000 and in the remaining parts of Canada 85,000. In the five Eastern provinces the net increase of rural population in the thirty years was just about 110,000, a small part of which was due to the addition of Ungava to Quebec and the district of Patricia to Ontario in 1912; Ontario, Quebec and New Brunswick showed increases of 89,000, 66,000 and 25,000 respectively, but there were decreases of 49,000 in Nova Scotia and 21,000 in Prince Edward Island. The rural populations of the Yukon and the Northwest Territories declined in the same period by 15,000 and 10,400 respectively.

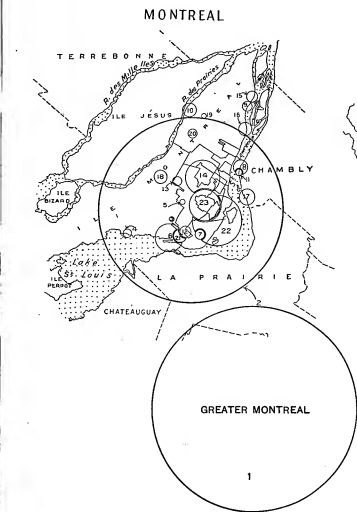
'Greater' Cities and Their Satellites.—In the last twenty years, there has been a tremendous expansion in the residential area of the leading cities, not generally accompanied by any increase in their municipal areas. This development is in large measure a consequence of the advent of cheap and rapid transportation of the people from residence to place of business, resulting from the enormous increase in motorbuses and particularly in private automobiles. Large numbers of people who work in the cities are able to live in comparative quietness outside of the city limits, driving themselves and their neighbours to and from work. Such people, according to the practice of the census, are enumerated at their place of residence rather than at their place of business. If their residences are close together, they may organize urban municipalities for the purpose of providing sanitation, water supply, etc., and the larger the city the greater is the likelihood that outside its municipal limits there will spring up communities which are municipally independent of the central unit, while their inhabitants are in the main economically dependent upon it. Stores spring up in such communities for the supply of needed commodities and personal services, so that the community may seem to have an independent existence, although in reality it is economically dependent upon its centre. Such residential suburban communities, and other places which are located in close proximity to the larger cities but being industrialized are not economically dependent thereon, may be described as satellite cities; these are rapidly increasing in Canada, especially in the neighbourhood of Montreal, Toronto, Vancouver, Winnipeg and Quebec. Sooner or later such communities tend to be absorbed by the central unit, as when Point Grey and South Vancouver were incorporated with Vancouver on January 1, 1929. However, before absorptions of this kind are effected, the satellite communities will very likely have become independent cities or towns with the usual powers of political self-government.

This general movement to the suburbs may have its defects from the broad point of view of social welfare, since people of certain classes may thus withdraw themselves from the municipal problems of the economic unit of which they are a part. These communities also present diffi-

TEN 'GREATER' CITIES* OF CANADA WITH THEIR CONSTITUENT SATELLITE COMMUNITIES, CENSUS OF 1931

All circles are in proportion to the populations of the respective cities and satellite communities and do not indicate boundaries or topographical areas.

Scale of miles for base maps
0 5 10 15 20



	POPULATION		POPULATION
1. GREATER MONTREAL.....	1,000,159		
2. Montreal (City Proper).....	818,517		
Satellite Communities—			
3. Côte St-Louis (Village).....	490	13. Mont-Royal (Town).....	2,174
4. Dorval (Town).....	2,052	14. Outremont (City).....	28,641
5. Hampstead (Town).....	594	15. Pointe-aux-Trembles (Town).....	2,970
6. Lachine (City).....	18,630	16. St-Jean-de-Dieu (Longue-Pointe).....	4,578
7. LaSalle (Town).....	2,362	17. St-Lambert (City).....	6,075
8. Longueuil (City).....	5,407	18. St-Laurent (Town).....	5,348
9. Montreal East (Town).....	2,262	19. St-Leonard-de-Port-Maurice (Town).....	453
10. Montreal North (Town).....	4,519	20. St-Michel-de-Laval (Town).....	1,528
11. Montreal South (Town).....	1,164	21. St-Pierre (Town).....	4,185
12. Montreal West (Town).....	3,190	22. Verdun (City).....	60,745
		23. Westmount (City).....	24,235

Satellite Communities—Continued.

	POPULATION
1. GREATER TORONTO.....	808,864
2. Toronto (City Proper).....	631,207
3. Etobicoke Township (Part).....	12,096
4. Forest Hill (Village).....	5,207
5. Leaside (Village).....	938
6. Long Branch (Village).....	3,962
7. Mimico (Town).....	6,800
8. New Toronto (Town).....	7,146
9. Scarborough Township (Part).....	14,474
10. Swansea (Village).....	5,031
11. Weston (Town).....	4,723
12. York Township.....	69,593
13. York East Township.....	26,080
14. York North Township (Part).....	11,607

Satellite Communities—Continued.

	POPULATION
1. GREATER VANCOUVER.....	308,640
2. Vancouver (City Proper).....	246,593
3. Burnaby District (Mun.).....	25,564
4. New Westminster (City).....	17,524
5. North Vancouver (City).....	8,510
6. North Vancouver District (Mun.).....	4,188
7. University Endowment Area.....	575
8. West Vancouver District (Mun.).....	4,786

Satellite Communities—Continued.

	POPULATION
1. GREATER OTTAWA.....	175,988
2. Ottawa (City Proper).....	126,872
Satellite Communities—	
3. Eastview (Town).....	6,686
4. Gloucester Township (Part)—including Billings Bridge, Cyrville, Overbrook and Ridgemount.....	1,947
5. Hull (City).....	29,433
6. Nepean Township (Part)—including Highland Park, Westboro and Woodroffe.....	7,817
7. Rockcliffe Park (Village).....	951

Satellite Communities—Continued.

	POPULATION
1. GREATER WINDSOR.....	110,385
2. Windsor (City Proper).....	63,108
Satellite Communities—	
3. East Windsor (City).....	14,251
4. LaSalle (Town).....	703
5. Ojibway (Town).....	79
6. Riverside (Town).....	4,432
7. Sandwich (Town).....	10,715
8. Sandwich East Township (Part).....	3,449
9. Sandwich West Township (Part).....	1,514
10. Tecumseh (Town).....	2,159
11. Walkerville (Town).....	10,105

Satellite Communities—Continued.

	POPULATION
1. GREATER HALIFAX.....	74,161
2. Halifax (City Proper).....	59,275
Satellite Communities—	
3. Dartmouth (Town).....	9,100
4. The District including the following Polling Divisions: Bedford Basin (Part); Cole Harbour; Ferguson's Cove and Northwest Arm (Part).....	5,786

Satellite Communities—Continued.

	POPULATION
1. GREATER SAINT JOHN.....	55,611
2. Saint John (City Proper).....	47,514
Satellite Communities—	
3. Lancaster Parish (Part)—including Beaulieu and Fairville.....	5,175
4. Simonds Parish (Part)—including Brookfield, Goldenberg, East St. John and Little River.....	2,922

Satellite Communities—Continued.

	POPULATION
1. GREATER QUEBEC.....	166,435
2. Quebec (City Proper).....	130,594
Satellite Communities—	
3. Beauport (Town).....	3,242
4. Charlesbourg (Village).....	1,869
5. Giffard (Village).....	3,573
6. La Petite Rivière (Parish).....	267
7. Lauzon (Town).....	7,084
8. Lévis (City).....	11,724
9. Quebec West (Town).....	1,813
10. St-Colomb-de-Sillery (Parish).....	2,794
11. Ste-Foy Parish (Part).....	946
12. St-Michel-Archange (Maison).....	2,349

Satellite Communities—Continued.

	POPULATION
1. GREATER WINNIPEG.....	284,129
2. Winnipeg (City Proper).....	218,785
Satellite Communities—	
3. Brooklands (Village).....	2,462
4. Fort Garry (Mun.).....	3,926
5. Kildonan East (Mun.).....	9,047
6. Kildonan North (Mun.).....	1,347
7. Kildonan West (Mun.).....	6,132
8. Old Kildonan (Mun.).....	16,305
9. St-Boniface (City).....	16,647
10. St-James (Mun.).....	13,903
11. Tuxedo (Mun.).....	1,402
12. Tuxedo (Town).....	1,173

Satellite Communities—Continued.

	POPULATION
1. GREATER HAMILTON.....	163,710
2. Hamilton (City Proper).....	155,547
Satellite Communities—	
3. Ancaster Township (Part).....	2,391
4. Barton Township (Part).....	2,360
5. Saltfleet Township.....	3,412

Satellite Communities—Continued.

	POPULATION
1. GREATER OTTAWA.....	175,988
2. Ottawa (City Proper).....	126,872
Satellite Communities—	
3. Eastview (Town).....	6,686
4. Gloucester Township (Part)—including Billings Bridge, Cyrville, Overbrook and Ridgemount.....	1,947
5. Hull (City).....	29,433
6. Nepean Township (Part)—including Highland Park, Westboro and Woodroffe.....	7,817
7. Rockcliffe Park (Village).....	951

Satellite Communities—Continued.

	POPULATION
1. GREATER WINDSOR.....	110,385
2. Windsor (City Proper).....	63,108
Satellite Communities—	
3. East Windsor (City).....	14,251
4. LaSalle (Town).....	703
5. Ojibway (Town).....	79
6. Riverside (Town).....	4,432
7. Sandwich (Town).....	10,715
8. Sandwich East Township (Part).....	3,449
9. Sandwich West Township (Part).....	1,514
10. Tecumseh (Town).....	2,159
11. Walkerville (Town).....	10,105

Satellite Communities—Continued.

	POPULATION
1. GREATER HALIFAX.....	74,161
2. Halifax (City Proper).....	59,275
Satellite Communities—	
3. Dartmouth (Town).....	9,100
4. The District including the following Polling Divisions: Bedford Basin (Part); Cole Harbour; Ferguson's Cove and Northwest Arm (Part).....	5,786

Satellite Communities—Continued.

	POPULATION
1. GREATER SAINT JOHN.....	55,611
2. Saint John (City Proper).....	47,514
Satellite Communities—	
3. Lancaster Parish (Part)—including Beaulieu and Fairville.....	5,175
4. Simonds Parish (Part)—including Brookfield, Goldenberg, East St. John and Little River.....	2,922

Satellite Communities—Continued.

	POPULATION
1. GREATER QUEBEC.....	166,435
2. Quebec (City Proper).....	130,594
Satellite Communities—	
3. Beauport (Town).....	3,242
4. Charlesbourg (Village).....	1,869
5. Giffard (Village).....	3,573
6. La Petite Rivière (Parish).....	267
7. Lauzon (Town).....	7,084
8. Lévis (City).....	11,724
9. Quebec West (Town).....	1,813
10. St-Colomb-de-Sillery (Parish).....	2,794
11. Ste-Foy Parish (Part).....	946
12. St-Michel-Archange (Maison).....	2,349

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Satellite Communities—	
3. Brooklands (Village).....	2,462
4. Fort Garry (Mun.).....	3,926
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9. St-Boniface (City).....	16,647
10. St-James (Mun.).....	13,903
11. Tuxedo (Mun.).....	1,402
12. Tuxedo (Town).....	1,173

Satellite Communities—Continued.

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1. GREATER HAMILTON.....	163,710
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Satellite Communities—	
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1. GREATER OTTAWA.....	175,988
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Satellite Communities—	
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Satellite Communities—Continued.

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8. Lévis (City).....	11,724
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Satellite Communities—	
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7. Kildonan West (Mun.).....	6,132
8. Old Kildonan (Mun.).....	16,305
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12. Tuxedo (Town).....	1,173

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	POPULATION
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Satellite Communities—	
3. Eastview (Town).....	6,686
4. Gloucester Township (Part)—including Billings Bridge, Cyrville, Overbrook and Ridgemount.....	1,947

**MAPS OF
TEN 'GREATER' CITIES OF CANADA
WITH THEIR
CONSTITUENT SATELLITE COMMUNITIES
CENSUS OF 1931**

culties from the point of view of the census-taker. They may, in many cases, have no separate municipal existence or may constitute only a small part of a township, while the rest and perhaps the preponderant part of the township is distinctly rural in character; or again the reverse may be the case—the organized area may dominate the policy of the township council where only a minority of farmers and other such rural dwellers is left. In the Toronto district the problem of satellite communities was solved by cutting off the two small urbanized townships of York and East York from the original York township, thereby leaving the larger mainly rural area in that township to have a separate existence as the township of North York.

In the United States the need that has been felt of combining for certain purposes the population of the central city and of the dependent thickly settled areas surrounding that city has been recognized by the Census Bureau and a separate report has been published, which is based on the Census of 1930 and deals with these central cities and their satellites under the name of "metropolitan districts". Various statistical compilations have been made for these metropolitan areas and there is no doubt that such analyses serve a useful purpose.

The Dominion Bureau of Statistics, after the Census of 1931, accordingly compiled for the leading cities not only the population resident within each central city but that in the various dependent or nearby communities, and published totals for these metropolitan areas or so-called 'greater' cities. Of course, there was a question as to how far the dependent communities extended, and difficulty was experienced in fixing limits in certain cases, especially where the satellite community had not been incorporated as an urban municipality separate and distinct from the township or rural constituency. It was found, however, that in 1931 Canada had at least 10 'greater' cities—large cities which had well defined satellite communities in close economic or geographical relationship to them; but it was also found that all of our populous cities were not in this position, *e.g.*, London, Calgary and Edmonton. Maps of the 10 'greater' cities, Chart C, show the cities proper and their respective satellite components. Mention will now be made of all but the three smallest, 'Greater Windsor' (110,385), 'Greater Halifax' (74,161) and 'Greater Saint John' (55,611).

Amongst other interesting facts, it was brought out by the investigation that in 1931 for the first time in the history of Canada we had within our limits an urban community of over one million people. This community, of course, is 'Greater Montreal' with 1,000,159 people, including the following places usually considered as separate communities: Montreal proper, 818,577; Verdun, 60,745; Outremont, 28,641; Westmount, 24,235; Lachine, 18,630; St-Lambert, 6,075; Longueuil, 5,407; St-Laurent, 5,348; Montreal North, 4,519; St-Pierre, 4,185; Montreal West, 3,190; Pointe-aux-Trembles, 2,970; Lasalle, 2,362; Montreal East, 2,242; Mount Royal, 2,174; Dorval, 2,052; St-Michel, 1,528; Montreal South, 1,164; Hampstead, 594; St-Léonard, 453; St-Jean-de-Dieu, 4,578; Côte-St-Luc, 490.

Again, while Toronto city proper is recorded as having 631,207 people, 'Greater Toronto' at the same date had a population of 808,864, including with the central city the following: York township, 69,593; York East township, 36,080; part of Scarborough township, 14,474; part of Etobicoke township, 12,096; part of York North township, 11,607; New Toronto, town, 7,146; Mimico, town, 6,800; Forest Hill, village, 5,207; Swansea, village, 5,031; Weston, town, 4,723; Long Branch, village, 3,962; Leaside, village, 938.

While Vancouver city had 246,593 people, 'Greater Vancouver' had 308,340. The additional people, numbering nearly 62,000, resided in Burnaby District, municipality, 25,564; New Westminster, city, 17,524; North Vancouver, city, 8,510; North Vancouver district, municipality, 4,788; West Vancouver district, municipality, 4,786; University endowment area, 575.

'Greater Winnipeg' had a population of 284,129, obtained by adding to the 218,785 of Winnipeg city proper the population of St. Boniface, city, 16,305; part of the municipality of St. James, 13,903; the municipality of Kildonan East, 9,047; part of the municipality of St. Vital, 10,402; the municipality of Kildonan West, 6,132; the municipality of Fort Garry, 3,926; Brooklands, village, 2,462; the municipality of Kildonan North, 1,347; Tuxedo, town, 1,173; the municipality of Old Kildonan, 647.

The figures for 'Greater Quebec' were 166,435, including Quebec, city, 130,594; Lévis, city, 11,724; Lauzon, town, 7,084; Giffard, village, 3,573; Beauport, town, 3,242; St-Colomb-de-Sillery, parish, 2,794; St-Michel-Archange (Mastai), 2,549; Charlesbourg, village, 1,869; Quebec West, town, 1,813; part of Ste-Foy parish, 946; Petite-Rivière parish, 247.

'Greater Ottawa', if in the term one may include communities in the province of Quebec as well as in Ontario, had a population of 175,988, including Ottawa, city, 126,872; Hull, city, 29,433;

Eastview, town, 6,686; Westboro, 3,560; the thickly settled part of Nepean township, 3,152; Gatineau Point, village, 2,282; Rockcliffe Park, village, 951; Billings' Bridge and Ridgemount, 725; Woodroffe, 685; Overbrook, 694; Cyrville, 528; Highland Park, 420.

Hamilton, according to the investigation, is increased less than any of the other 'greater' cities, except Saint John, by the addition of the thickly settled neighbouring areas. The total population of 'Greater Hamilton' was 163,710, including the city of Hamilton with 155,547; Saltfleet township, 3,412; the thickly settled part of Ancaster township, 2,391; the thickly settled part of Barton township, 2,360.

The 'greater' cities just referred to, as well as the suburban areas of many smaller cities, include various densely peopled areas whose populations are normally considered as rural by virtue of their being administered as townships or parishes. This is most evident in the case of suburban Toronto, where no less than 148,000 people, living in various townships and under township government in 1931, are included with the rural population but are considered also as residents of 'Greater Toronto.' Without these suburbanites, the record of the growth of rural as compared with urban population in the last generation would show an even more remarkable contrast.

Historical Summary.—The decline of rural population in the longer-settled communities of Canada has been studied in recent years by various members of the Dominion Bureau of Statistics and special reference might be made to the results of their investigations which were presented in two papers at meetings of the Canadian Political Science Association, the first by Mr. M. C. MacLean, and the second by Mr. O. A. Lemieux representing a group of five associates. The latter paper, as well as a summary of the former, was published in the 1934 Volume of Proceedings of the Association under the title "Factors in the Growth of Rural Population of Canada". It may, therefore, suffice to state here their general conclusion that in Eastern Canada "the counties which are still increasing in rural population are (1) counties located near urban centres and (2) counties in the early stages of colonization".

Reference might also be made to Volume II of the Census of 1931, especially Tables 8 and 12. Table 8 gives the population of cities, towns and villages of 1,000 and over according to areas in 1931 as recorded at each of the seven decennial censuses of the Dominion. Table 12 gives for the same seven censuses the population of every municipality, township or subdivision in the country, adjusted so far as possible to 1931 areas except for urban places. Nevertheless, care should always be exercised in making historical comparisons to allow for any changes in the areas enumerated, whether such changes are due to the separation of urban centres from rural areas or to other causes.

By way of summary of the growth of urban population outlined in this chapter, at least of the growth since the First Decennial Census of the Dominion in 1871, two tabulations and four illustrations are submitted herewith, Tables 2 and 3, and Charts D, E, F and G. Table 2 shows that the number of incorporated places has increased in every province from census to census since 1871, with the exception of Prince Edward Island and British Columbia where, for a very few of the earlier decades, the numbers remained unchanged. For the same seven censuses, Table 3 presents the rural and urban numerical distribution of the population, also the absolute and relative increases in each by decades, and the percentage which each bears to the corresponding figures in 1871 and also the percentage rural and urban to the total population.

TABLE 2—INCORPORATED PLACES, CANADA AND PROVINCES, AT EACH DECENNIAL CENSUS, 1871-1931

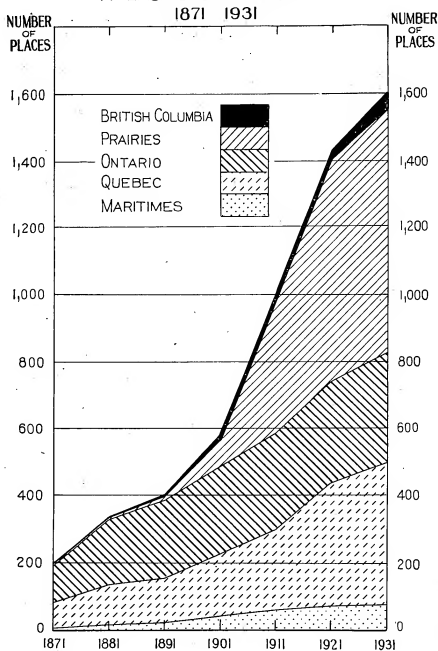
Province	1871	1881	1891	1901	1911	1921	1931
CANADA ¹	197	333	400	554 ²	1,013 ²	1,433 ²	1,603
Prince Edward Island	1	2	2	2	3	7	8
Nova Scotia	2	10	12	28	40	44	45
New Brunswick	4	6	7	11	19 ²	22 ²	23
Quebec	76	116	130	187	232	358	423
Ontario	111	193	231	283	293	314	330
Manitoba	2	3	15	22	49	52	56
Saskatchewan	-	-	-	35	249	429	466
Alberta	-	-	-	28	103	175	205
British Columbia	1	3	3	18 ²	25	32	47

¹ These census figures include, for all provinces and for various years, chiefly prior to 1921, a few places which were probably never incorporated, as well as some which, although once incorporated, were subsequently absorbed by larger centres or were disorganized and given rural status.

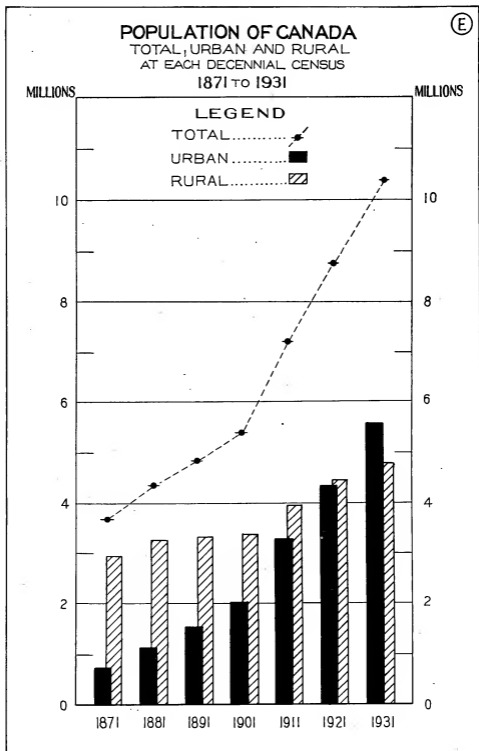
² These figures are slightly smaller than those which in previous publications included a few places that were probably never incorporated.

INCORPORATED PLACES ECONOMIC AREAS OF CANADA AT EACH DECENNIAL CENSUS

D



See Table 2



See Table 3

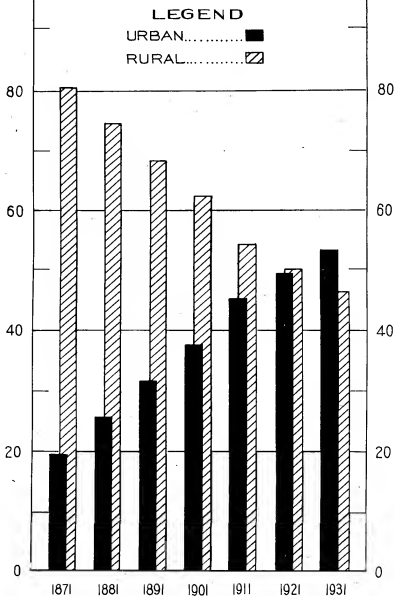
(F)

POPULATION OF CANADA
PERCENTAGE OF URBAN AND RURAL
AT EACH DECENNIAL CENSUS

1871 TO 1931

PER CENT

PER CENT

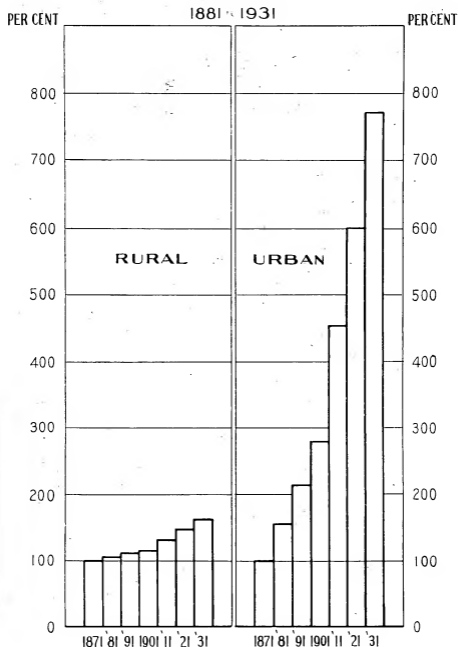


See Table 3

POPULATION OF CANADA

⑥

PERCENTAGE OF RURAL AND URBAN OVER 1871
AT EACH DECENNIAL CENSUS



See Table 3

TABLE 3—RURAL AND URBAN POPULATION, CANADA, AT EACH DECENNIAL CENSUS, 1871-1931

Year	Rural	Urban	Total	P.C. Increase
1871.....	2,966,914	722,343	3,689,257	-
1881.....	3,215,303	1,109,507	4,324,810	17.23
1891.....	3,296,141	1,537,098	4,833,239	11.76
1901.....	3,357,093	2,014,222	5,371,315	11.13
1911.....	3,933,696	3,272,947	7,206,643	34.17
1921.....	4,435,827	4,352,122	8,787,949	21.94
1931.....	4,804,728	5,572,058	10,376,786	18.08

Decade Ended	Absolute Increase by Decades		Percentage Increase by Decades	
	Rural	Urban	Rural	Urban
1881.....	248,389	387,184	8.37	53.60
1891.....	80,838	427,691	2.51	38.54
1901.....	60,952	477,124	1.85	31.04
1911.....	576,008	1,258,725	17.18	62.49
1921.....	502,131	1,079,175	12.76	32.97
1931.....	368,901	1,219,939	8.32	28.03

Year	Percentage of 1871 Population		Percentage of Total Population	
	Rural	Urban	Rural	Urban
1871.....	100.00	100.00	80.42	19.58
1881.....	108.37	153.60	74.35	25.65
1891.....	111.10	212.79	68.20	31.80
1901.....	113.15	278.85	62.50	37.50
1911.....	132.59	453.10	54.58	45.42
1921.....	149.51	602.50	50.48	49.52
1931.....	161.94	771.39	46.30	53.70

* Corrected for transfer of territory to Labrador.

The urban population in Table 3 represents the total number of persons in the incorporated places enumerated in Table 2, including the few places referred to in footnotes 2 and 3 thereof; all the remainder of the population is considered as rural. At the Census of 1931 the total rural population of the Dominion was returned as 4,804,728, while that in urban municipalities, organized under the various and very differing provincial laws, was 5,572,058, the urban population thus exceeding the rural by 767,330.*

Three Definitions of Rural and Urban.—The defining or comparing of urban and rural population of Canada on this basis of provincial incorporation is, as already intimated, the main method employed so far in this Monograph; specific reference has been made to any alternative definition wherever applied—a practice adhered to throughout. This method of defining, which is the first of three adopted by the Dominion Bureau of Statistics, is the one most commonly used, despite the objection that there are no uniform standards between provinces regarding either the population or area required before papers of incorporation are granted. Furthermore, this means of comparison is generally recognized as the best or at least the most acceptable if for no other reason than that certain comparable data over a long period of years, needed in connection with the other two methods, do not exist or are not readily available.†

Incorporated Urban Places under 1,000.—The second method of defining urban and rural population involves the exclusion of smaller incorporated places from the urban category and their inclusion with the rural. A more or less arbitrary dividing line or limit is set according to the size of population of such smaller places. In early years many countries were content to compare only the aggregate of persons in cities and towns of 5,000 and over with the total population, but in more recent years the tendency has been to establish the dividing line at various

* These figures are from the Census of Canada, 1931, Vol. II, Table 14, p. 141, while in Vol. III, Table 1, p. 2, the rural population was stated as 4,802,988 and the urban 5,573,798, the latter including the 1,740 persons in Royalty (an unincorporated suburb of Charlottetown, P.E.I.), which in Vol. II was regarded as rural; the urban excess is thus increased to 776,810 from 767,330. The Vol. III figures were so altered in order to make the cross-classifications therein comparable with those of earlier censuses.

† See (a) Census of Canada, 1931, Vol. II, p. 139, article on "Rural and Urban Population" with special reference to the "Office Practice" of the Dominion Bureau of Statistics regarding this first definition.

(b) Appendix I of this Monograph, a Tabular Statement of Abbreviated Definitions of Urban Municipalities, Prerequisites to Incorporation in regard to Population and Area, by Provinces.

(c) Appendix II of this Monograph, Brief Statement of the Law and Practice in each Province in regard to Urban Incorporation.

figures under 2,500, depending in part upon the kind of data or object of the comparison. For certain purposes the lower limit of urban population is fixed in the Dominion Bureau of Statistics at 1,000, irrespective of the Provincial laws dealing with incorporation. Under this definition of urban, it is not possible, however, to secure all the analyses included in this study, and wherever it is applied, the dividing line of 1,000 is stated in the context. On this basis, contrasted with the first, the rural population in 1931 would be increased to 5,215,885 or 50.26 p.c. of the entire population of the Dominion, and the urban would be decreased to 5,160,901 or 49.74 p.c. Although these two figures are very nearly equal, they show an excess of 54,984 in favour of the ruralites, while by the first method the previously mentioned excess of 767,330 was in favour of the urbanites (Table 4).

TABLE 4.—RURAL POPULATION (INCLUDING URBAN MUNICIPALITIES WITH LESS THAN 1,000 PERSONS) AND URBAN POPULATION (EXCLUDING SUCH MUNICIPALITIES), AND PERCENTAGE OF RURAL AND URBAN, CANADA AND PROVINCES, 1931

	Population		Percentage	
	Rural	Urban	Rural	Urban
CANADA.....	5,215,885	5,160,901	50.26	49.74
Prince Edward Island.....	70,855	17,183	80.48	19.52
Nova Scotia.....	289,631	225,215	56.48	43.52
New Brunswick.....	281,438	126,781	68.94	31.06
Quebec.....	1,190,355	1,833,400	41.43	58.57
Ontario.....	1,418,018	2,015,665	41.26	58.74
Manitoba.....	405,048	294,491	57.94	42.06
Saskatchewan.....	734,664	187,121	79.70	20.30
Alberta.....	503,723	227,882	68.85	31.15
British Columbia.....	309,190	385,163	44.62	55.38
Yukon.....	4,230	-	100.00	-
Northwest Territories.....	9,723	-	100.00	-

It may be assumed that in any province of Canada a closely settled community of more than 1,000 people will be incorporated as an urban municipality, while in the Prairie Provinces, in particular, much smaller communities are so incorporated. When the dividing line is placed at 1,000, the urban populations of some provinces are very slightly reduced, while in other provinces quite a considerable part of the urban totals is transferred to the rural column. It will be noted from Table 4 that, by this method of comparison, Prince Edward Island and Saskatchewan are the most rural of the provinces, since they have approximately four-fifths of their populations resident in rural areas. Ontario and Quebec are, of course, the most urbanized, having nearly three-fifths of their inhabitants in urban communities of 1,000 and over, while British Columbia follows closely with five-ninths. Nova Scotia and Manitoba have about three-sevenths of their totals, and New Brunswick and Alberta rather less than one-third, resident in such urban communities. The population, which is transferred from the urban to the rural category by including with the rural all incorporated urban communities of less than 1,000 population, aggregated 411,157 or 3.96 p.c. of the total population of Canada in 1931, but, as might be expected from the facts just outlined, the percentages differ greatly in the various provinces, ranging from 0.53 p.c. in New Brunswick and 1.38 p.c. in British Columbia to 6.92 p.c. in Alberta and 11.26 p.c. in Saskatchewan. Ontario had 2.34 p.c. and Quebec 4.53 p.c. of its people resident in incorporated urban communities of less than 1,000 population. For such communities similar 1931 figures for all the provinces are submitted with an analysis of farm and non-farm population in columns D and E of Table 5, in discussing which in immediately succeeding paragraphs objections will be taken to the method of defining rural and urban population by arbitrary dividing lines, such as this one of 1,000 (see Chart H).

Farm and Non-Farm Population.—The third distinction between rural and urban involves this comparison of farm and non-farm population, the non-farm comprising, in addition to residents of incorporated places, an intermediate group numbering 1,581,306 in 1931, which included many persons essentially urban in occupation and modes of living and perhaps also in population types. In all Canadian censuses prior to 1931, these people were classed as rural. For the most part, they reside in suburban districts near satellite cities, in unincorporated hamlets, police villages or country parishes. They are engaged less in farming than in selling and distributing goods, in rendering professional and other services; or in lumbering, fishing, trapping and other occupations.

The figures for populations which are unincorporated and yet are non-farm, if available over a long period, would probably show that this section of the population, excluding the more recent suburban group, formed in the past a much larger proportion of the total population than at present. They have a greater "mobility" than the farm population, the latter being more or less tied to their land. The trek of thousands of these non-farm ruralites to the cities was one of the important causes, amongst others already discussed in this chapter, of the disproportionate growth of the urban as contrasted with the rural communities, the urban, as usually defined, having increased 7.7 times in the last sixty years, while the rural has increased only 1.6 times. This urban migration was in no small part due to the development of mass production which led to the absorption by urban plants and factories of numerous rural tradesmen and artisans of varied crafts—blacksmiths, weavers, carpenters, carriage builders, tanners, millers, coopers, cobblers, etc.; it also led to the more recent movement of young women from both the farm and rural non-farm groups to seek employment in offices and factories.

The classification of the people as farm and non-farm, already adopted by the United States Bureau of the Census, was first made for the Dominion in 1931; there are no comparable figures for previous census years although rough approximations of them might be made from the Census of Occupations and Industries, Census Volume VII. The amounts and percentages for 1931, however, are set forth in Table 5, which classifies the population by provinces according to the non-farm and rural farm elements. The former class is subdivided into three groups; (1) incorporated places of 1,000 and over in columns B and C, (2) incorporated places of less than 1,000 in columns D and E, and (3) other non-farm population in columns F and G.

The other non-farm population, being outside of incorporated places and therefore often termed rural non-farm, forms a much larger proportion of the population of some provinces than of others; moreover, for most of the provinces, the number of rural non-farm residents seems to vary inversely with the number in incorporated places under 1,000. On the one hand, Ontario with a rural non-farm population of 550,141 or 16.03 p.c. of its total has only 80,327 persons or 2.34 p.c. in incorporated places of less than 1,000. On the other hand, Saskatchewan with but 69,473 rural non-farm people or 7.53 p.c. of its total has no less than 103,784 persons or 11.26 p.c. in these smaller incorporated places—a fifth more than in Ontario, where there are so many large unincorporated suburban areas, police villages and hamlets, while in Saskatchewan very small places are incorporated; in fact the percentage of Saskatchewan's population living in incorporated units under 1,000 is considerably greater than that in any other province, but its percentage of rural non-farm is much less than any other.

The other non-farm or so-called rural non-farm population of Canada at 1,581,306 represents 15.24 p.c. of the total. Nova Scotia, New Brunswick, Ontario, Manitoba and British Columbia exceed this proportion, while the other provinces fall short of it; the largest is British Columbia with 28.70 p.c.

The foregoing facts and figures with wide divergencies as between provinces make obvious the objections to dividing rural and urban population on the basis of either total incorporations or those over and under 1,000, especially if the purpose be provincial comparison. For this purpose the most accurate and definite method is the simple non-farm and rural farm distinction which is made in columns H to K of Table 5 and in Chart I. British Columbia has the highest percentage of total non-farm (85.56) and conversely the lowest percentage of farm population; Ontario comes second (77.11) and Quebec third (74.13); Prince Edward Island has the lowest (37.57) and Saskatchewan but slightly more (39.09). The non-farm population of 7,153,364 in 1931 represented 68.94 p.c. of the total, whereas the rural farm population of 3,223,422 was only 31.06 p.c., the excess of non-farm over rural farm being 3,929,942. A comparison of this table with Tables 3 and 4 will show the extent to which the distribution by farm and non-farm differs from the first two methods of rural and urban division.




Additional Methods Recommended.—A fourth and a fifth method of defining rural and urban population are recommended for experimentation. The fourth, a semi-typological analysis or classification, is briefly referred to in the following terms by Professor Carle C. Zimmerman of the Department of Sociology at Harvard University,—"As a provincial city of 25,000 people may be more akin to rural society than to urban, whereas a smaller aggregate may belong more to the urban world, it is preferable to define rural society typologically rather than statistically."*

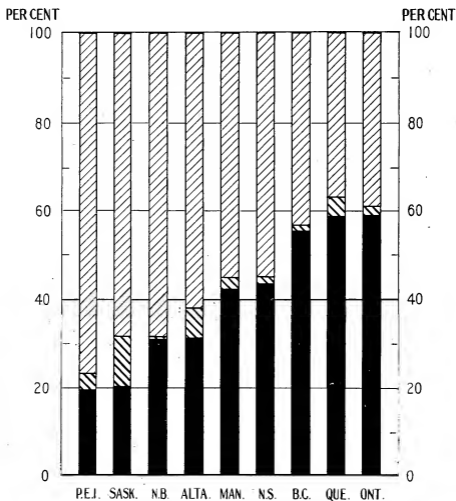
* See article on "Rural Society" in *The Encyclopedia of the Social Sciences*, Vol. 13, pp. 469-71, especially p. 469.

(H)

POPULATION OF CANADA

PERCENTAGE OF URBAN AND RURAL BY PROVINCES 1931

URBAN...  INCORPORATED PLACES 1000 AND OVER
 RURAL...  INCORPORATED PLACES UNDER 1000
 RURAL...  REMAINING POPULATION



See Tables 4 and 5 (columns C and E)

①

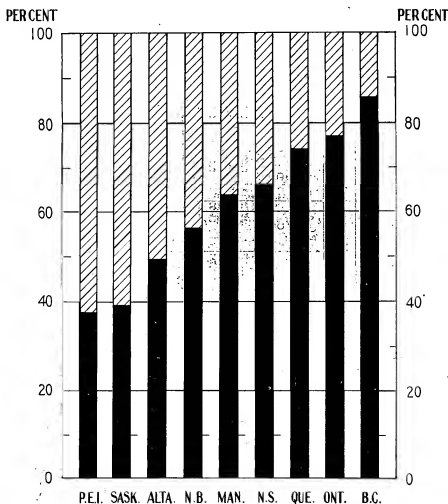
POPULATION OF CANADA

PERCENTAGE OF NON-FARM AND RURAL FARM
BY PROVINCES

1931

NON-FARM.....■

RURAL FARM...▨



See Table 5 (columns J and K)

TABLE 5—NUMERICAL AND PERCENTAGE DISTRIBUTION OF RURAL FARM POPULATION AND NON-FARM POPULATION, CANADA AND PROVINCES, 1931

Province	Total Population	Non-Farm Population ¹							Total Rural Farm Population	P. C. of Total		
		Incorporated Places of 1,000 and over		Incorporated Places under 1,000		Other Non-Farm						
		Population	P. C. of Total	C	D	E	F	G	H	I	J	K
	A	B	C	D	E	F	G	H	I	J	K	
CANADA.....	10,376,786	5,160,901	49.74	411,157	3.96	1,581,306	15.24	7,153,364	3,223,422	68.94	31.06	
Prince Edward Island.....	88,068	17,183	19.52	3,202	3.64	12,690	14.41	33,075	54,983	37.57	62.43	
Nova Scotia.....	512,846	223,215	43.52	8,439	1.65	107,227	20.91	338,881	173,965	66.08	33.92	
New Brunswick.....	408,219	126,781	31.06	2,159	0.53	100,785	24.69	229,725	178,494	56.28	43.72	
Quebec.....	2,874,255	1,683,400	58.57	130,206	4.53	317,031	11.03	2,130,627	743,598	74.13	25.87	
Ontario.....	3,431,683	2,015,665	58.74	80,327	2.34	550,141	16.03	2,646,133	785,550	77.11	22.89	
Manitoba.....	700,139	294,491	42.06	21,478	3.07	129,858	18.55	445,837	234,302	63.68	36.32	
Saskatchewan.....	921,783	187,121	20.30	103,784	11.26	69,473	7.53	360,378	561,407	39.09	60.91	
Alberta.....	731,605	227,832	31.15	50,020	6.92	82,198	11.23	360,706	370,899	49.30	50.70	
British Columbia.....	604,263	385,183	55.48	9,570	1.38	199,280	28.70	594,019	100,244	85.56	14.44	
Yukon.....	4,290	-	-	1,360	32.15	2,870	67.85	4,290	-	100.00	-	
Northwest Territories.....	9,723	-	-	-	-	9,723	100.00	9,723	-	100.00	-	

¹ The non-farm figures include 65,718 persons on urban farms, of whom more than half, 33,419, were in the province of Quebec, where the percentages of farm and non-farm would be changed to 27.03 and 72.97 respectively, if these persons were included with the farm population; the percentages for the other provinces and for the Dominion would not be affected by more than 7/10 of one per cent.

The underlying principle is illustrated by a few specific examples from the Census of Canada, 1931. York township, a part of 'Greater Toronto', being unincorporated, is a "rural" area, according to the usual definition; but out of a total population in this township of 69,593, its farm population amounts to merely 146. As already pointed out, farm population is not the only rural population, but under no reasonable estimate could the *bona fide* rural population of the township at this Census be regarded as exceeding 1 p.c. of its total population or about 700 persons. A somewhat similar condition exists in Saltfleet township within the limits of 'Greater Hamilton', also in St. James and the Kildonan municipalities within 'Greater Winnipeg', all of which municipalities and townships, together with their population figures, are shown on the maps of 'greater' cities in Chart C. But these discrepancies in classification are confined neither to the larger districts nor to areas satellite to urban places, as indicated by two other examples. On the one hand, the village of Deloro in the county of Hastings, Ontario, having a population of only 331, could not be included as urban under the definition limiting that classification to places of 1,000 or more inhabitants and yet it is decidedly urban in character, its people being engaged mostly in the smelting industry. On the other hand the village of Winchester in the county of Dundas, Ontario, with a population of 1,027, is composed mainly of retired farmers and shopkeepers serving a district purely rural, of which it is really an integral part, but it is designated urban under the first definition because the place is incorporated and also under the second because the population exceeds the 1,000 requirement.

Scores and perhaps hundreds of anomalies of this kind would be corrected by the application of the fourth method, which embraces a separation of definitely urban populations from those that are definitely rural. Accordingly, its *modus operandi* would demand that every community, large or small, incorporated or unincorporated, be analysed to determine whether it is "overwhelmingly" rural or urban in character or type, an "overwhelming" majority to be set at some figure between 65 p.c. and 75 p.c.*

The other recommended definition, the fifth and last, is based on an extension of the 'greater' city plan.† It would define as urban the population of incorporated places, plus that of all "densely peopled" unincorporated political divisions or areas, such as townships, district municipalities, parishes, police villages and hamlets, which are satellite to, or largely dependent in their business and economic relations upon, adjacent cities or towns. The many difficulties of fixing limits and bounds, described in the section on 'greater' cities, would of course be encountered in applying this plan, and greater precision would be attained if the so-called "densely peopled" areas were restricted by a clause stipulating a definite population density—a minimum of 1,000 or more persons per square mile is a prerequisite adopted by the United States Census Bureau in connection with its 1930 rural-urban classifications.

Of these two suggested methods, the more complete and therefore the better one, but at the same time the more complex or comprehensive, is undoubtedly the former, the fourth, which provides that when a substantial majority of the population of any community belongs *prima facie* to either the rural or the urban category, it is so classified—and that, after all, is the primary objective. The adoption of either of these two methods would, however, be practicable, none of the attendant difficulties being insurmountable. Accordingly, both of them are strongly recommended for experimentation by private researchers, university statistical laboratories, research foundations in population problems and the Social Analysis Branch of the Dominion Bureau of Statistics. Possibly they might also be considered when plans are being laid for tabulations of additional data in connection with a future census, since they are quite superior to the present three methods—*video meliora proboque deteriora sequor*.

*An experiment, at the Institute for Social Sciences of Stockholm University, in the typological classification of the population of Sweden into four groups, *viz.*, agricultural, industrial, mixed and towns, is described by Professor Gunnar Myrdal of that University, under the title "Industrialization and Population" in the collection of *Economic Essays in Honour of Gustav Cassel*, pp. 435-57.

†See Swedish Official Statistics, *Folkräkningen den 31 December, 1930*, av Statistiska Centralbyrån, Vol. I, Tab. 3, *Folkmängden i städer, köpingar och municipalsamhället med förortsbefolkning*, pp. 138-40.



PART C

**ATTRIBUTES OF POPULATION—
VARIOUS PHASES OF RURAL AND URBAN
DISTRIBUTION IN CANADA**

CHAPTER V

SEX AND AGE

Sex Distribution in the Last Generation.—The sex and age distribution of the rural and urban population in the Dominion as a whole and also in each of the provinces, as at the last four censuses, is given in Table 6, which shows the number of males to 1,000 females in each five-year group, as well as in the age group under 1 year, in that from 1 to 4 years inclusive and in the aggregate for all ages.

In 1901, owing to the relatively small immigrant population, the excess of males over females in the total population was comparatively small, amounting to only about 132,000. An excess of 170,000 males in the rural areas was partly offset by an excess of 38,000 females in the cities, towns and villages, so that already there was a disproportionate aggregation of females in urban communities. The enormous immigration of the ensuing decade raised the excess of males to about 437,000 in 1911, the highest recorded since Confederation. In that year the males exceeded the females in both the rural and the urban population; the male majority, which in the rural districts was 366,000 and in the urban 71,000, was found not only in the newly settled areas of the West but also in the eastern cities. This superiority in numbers of the male population, as shown by the Census of 1911, was probably increased in the next two or three years in consequence of the very heavy immigration of that period, although any figures on total population for other than census years are merely estimates. Thereafter, the Great War removed either temporarily or permanently a large portion of the younger male population, costing us the lives of some 60,000 men who were killed in combat or died of wounds or disease during the conflict. An additional 20,000 residents of Canada (most of them born in the British Isles presumably) took their discharge in the United Kingdom. The loss of these "overseas men" and the very marked decline of immigration during the War years were some of the factors causing a very considerable reduction in the excess of males at the Census of 1921. Instead of 437,000, as in 1911, it was now only 271,000 in a substantially larger total population. Rural males outnumbered rural females by 329,000, while urban males were fewer than urban females by nearly 58,000.

The decade between 1921 and 1931 was a period of peace and progress, but the renewed immigration was on nothing like the scale that had prevailed before the War. Nevertheless, the number of male immigrants arriving in those years considerably exceeded the number of females, which in part was the cause of a rise to 372,000 in the excess of males in the 1931 population. Rural males exceeded rural females by 401,000, while urban females outnumbered urban males by 29,000.

There were many forces working on our population distribution throughout the past generation, two of which may be mentioned here, *viz.*, immigration and the Great War. Immigration in normal times shows a preponderance of young men, and it was natural that in 1911 young males would be found in greater numbers than young females. Even in urban areas in 1911 there were 1,050 males of ages 20 to 24 years, 1,176 of 25 to 29 years and 1,178 of 30 to 34 years to every 1,000 females at these same ages, while in the rural areas there were no less than 1,345 males of 20 to 24 years, 1,395 of 25 to 29 years and 1,340 of 30 to 34 years to every 1,000 females at the respective ages.

For the same age groups, however, the rural figures in 1921 dropped to 1,185, 1,207 and 1,255 males per 1,000 females, and the urban were 810, 893 and 1,001 males per 1,000 females. Accordingly, there was quite a distinct lack of young men of 20 to 24 in the 1921 population, especially in the urban. This was in a large measure due to the Great War with its loss of life and demobilizations overseas, and partly also to such factors as emigration to the United States, the supersession of young men by young women in many employments and mis-statements of ages made to the census enumerators.

The 1931 Census showed a very considerable excess of males over females in the rural population in the age group 20 to 24, there having been 1,314 males to every 1,000 females, but in the urban population in the same age group there were only 860 males to every 1,000 females. So considerable a discrepancy in the young population which was not affected by the War would seem to be largely due to the supplanting of young men by young women in many urban occupations; at any rate, it is at these ages of 20 to 24 years that the largest percentage of the female population is gainfully occupied.

The last two decennial censuses, indeed, show for this age group (20 to 24 years) a larger difference between the male and female population of rural and urban communities than for any other quinquennial age period of active life. In extreme old age, of course, the disparity between the numbers of males and females is even greater among the urban population, but this is due to the general fact that women usually live longer than men.

TABLE 6—NUMBER OF MALES TO 1,000 FEMALES IN EACH QUINQUENNIAL AGE GROUP OF THE RURAL AND URBAN POPULATION, CANADA, AT EACH DECENNIAL CENSUS, 1901-1931

Age Groups	Rural				Urban			
	1901	1911	1921	1931	1901	1911	1921	1931
All ages.....	1,106	1,183	1,160	1,182	963	1,051	974	990
0 - 1.....	1,021	1,020	1,016	-	1,021	1,012	1,028	-
1 - 4.....	1,030	1,023	1,021	-	1,010	1,017	1,010	-
Total under 5.....	1,080	1,025	1,020	1,086	1,012	1,016	1,014	1,019
5 - 9.....	1,024	1,027	1,034	1,030	1,013	1,000	997	1,014
10 - 14.....	1,037	1,046	1,054	1,046	1,002	975	982	999
15 - 19.....	1,091	1,148	1,145	1,172	832	851	883	901
20 - 24.....	1,160	1,345	1,185	1,314	856	1,050	810	850
25 - 29.....	1,174	1,305	1,207	1,301	896	1,170	893	967
30 - 34.....	1,163	1,349	1,235	1,223	967	1,178	1,001	989
35 - 39.....	1,170	1,310	1,313	1,212	984	1,132	1,078	1,011
40 - 44.....	1,178	1,285	1,320	1,296	1,004	1,106	1,089	1,082
45 - 49.....	1,177	1,246	1,322	1,356	1,009	1,070	1,091	1,128
50 - 54.....	1,149	1,244	1,316	1,350	992	1,030	1,047	1,111
55 - 59.....	1,099	1,229	1,208	1,348	960	982	992	1,068
60 - 64.....	1,155	1,216	1,209	1,334	925	985	966	997
65 - 69.....	1,144	1,165	1,203	1,305	920	897	949	935
70 - 74.....	1,137	1,138	1,214	1,305	879	854	923	891
75 - 79.....	1,136	1,131	1,122	1,226	888	852	862	873
80 - 84.....	1,127	1,063	1,047	1,105	821	803	804	810
85 - 89.....	1,049	1,009	990	943	792	745	725	720
90 and over.....	901	918	825	796	720	682	665	599
Not stated.....	1,460	2,508	1,324	2,672	1,705	2,955	1,086	2,496

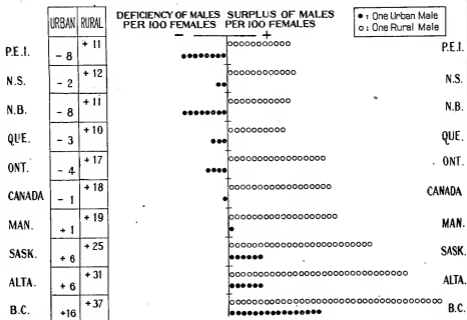
Sex Distribution in 1931.—The 1931 excess of urban population (767,330), according to the usual definition, was very unequally divided between the sexes, having been composed of 598,613 females and only 168,717 males. Furthermore, there was a considerable concentration of males in rural and of females in urban communities; males resident in rural areas numbered 2,602,912 as compared with 2,771,629 in urban, while females in rural areas numbered 2,201,816 as compared with 2,800,429 in urban. The excess of males in the rural areas was 401,096 and of females in the urban communities 28,800, constituting a net excess of 372,296 males in the total 1931 population of the Dominion. The rural areas had 118 males to every 100 females, while the urban had only 99 to every 100. Therefore, it is evident that the urban municipalities had a preponderance of females and the rural areas a decided preponderance of males.

The number of males and females and the percentages of the one to the other by provinces in 1931 are shown in Tables 7 and 8; Table 7 is based on the usual distinction between urban and rural, and Table 8 on the 1,000 lower limit for urban. The differences in the percentages of males to females for the nine provinces, owing to the methods of distinguishing between urban and rural population in these two tables, are considerable, with the exception of the rural figures for Saskatchewan where the disagreement is less than 2.5 p.c. The results of both analyses indicate that the surplus of males increases as we proceed westward from Quebec and that the deficiency of males in the urban areas of Eastern Canada changes to a surplus in those of the West, both phenomena being graphically illustrated in Chart J.

RELATIVE DEFICIENCY OR SURPLUS OF MALES TO FEMALES

URBAN AND RURAL

CANADA AND PROVINCES, 1931



See Table 7

TABLE 7—RURAL AND URBAN POPULATION, BY SEX, WITH PERCENTAGE OF MALES TO FEMALES, CANADA AND PROVINCES, 1931

Province	Rural			Urban		
	Males	Females	P.C. Males to Females	Males	Females	P.C. Males to Females
CANADA	2,602,912	2,201,816	118	2,771,629	2,800,429	99
Prince Edward Island	35,633	32,020	111	9,759	10,026	92
Nova Scotia	148,333	132,857	112	114,769	116,885	98
New Brunswick	146,856	132,413	111	61,754	67,186	92
Quebec	555,490	505,159	110	891,634	921,972	97
Ontario	719,973	618,716	117	1,028,869	1,067,123	96
Manitoba	209,090	175,071	119	158,966	157,003	101
Saskatchewan	350,363	280,515	125	149,570	141,331	106
Alberta	256,687	196,410	131	143,512	134,996	106
British Columbia	173,365	126,159	137	211,874	182,885	116
Yukon	1,853	867	191	942	418	223
Northwest Territories	5,214	4,509	116	-	-	-

TABLE 8—RURAL POPULATION (INCLUDING URBAN MUNICIPALITIES WITH LESS THAN 1,000 PERSONS) AND URBAN POPULATION (EXCLUDING SUCH MUNICIPALITIES), BY SEX, WITH PERCENTAGE OF MALES TO FEMALES, CANADA AND PROVINCES, 1931

Province	Rural			Urban		
	Males	Females	P.C. Males to Females	Males	Females	P.C. Males to Females
CANADA	2,810,067	2,405,818	117	2,564,474	2,596,427	99
Prince Edward Island	37,253	33,602	111	8,139	9,044	90
Nova Scotia	152,519	137,112	111	110,583	112,630	98
New Brunswick	147,876	133,562	111	60,744	66,037	92
Quebec	618,931	571,924	108	828,193	855,207	97
Ontario	759,282	656,736	116	989,562	1,026,103	96
Manitoba	219,790	185,858	118	148,275	146,216	101
Saskatchewan	404,251	330,413	122	95,684	91,437	105
Alberta	283,432	220,291	129	116,767	111,115	106
British Columbia	178,694	130,408	137	206,525	178,638	116
Yukon	2,826	1,405	201	-	-	-
Northwest Territories	5,214	4,509	116	-	-	-

Of the total population of 411,157 in the incorporated urban communities having less than 1,000 inhabitants, 207,155 were males and 204,002 were females, a proportion of 101.5 males to every 100 females. This excess of males was due to the existence of many small urban communities in the West.

When all places of 1,000 people and over are regarded as urban and the balance as rural, the net excess of 372,296 males in the total population is found to lie wholly in the non-urban areas, where the males exceed the females by no fewer than 404,249, while in the urban areas, as thus defined, the females exceed the males by 31,953. Whereas in these "rural" areas there are no fewer than 117 males to 100 females, in the "urban" areas there are only 99 males to 100 females. Table 9, comprising four groups of urban communities of 1,000 and over set forth on page 150 of Volume II of the Census of 1931, shows that the proportion of males to females tends to decrease as the size of the community increases. In urban places of less than 1,000 there is, to repeat, a proportion of just over 101.5 males to 100 females. Accordingly, as a general tendency, the larger the community, the greater the excess of females in the population.

TABLE 9—URBAN COMMUNITIES OF 1,000 AND OVER, IN FOUR POPULATION GROUPS, WITH PROPORTION OF MALE TO FEMALE RESIDENTS IN EACH, CANADA, 1931

Size of Communities—Population Group	Number of Such Communities	Males to 100 Females
1,000 - 9,999.....	453	101
10,000 - 29,999.....	50	99
30,000 - 99,999.....	13	99
100,000 and over.....	7	98

The disproportion which exists between the number of males and females in rural and in urban areas respectively is accentuated by the preponderance of males in outlying frontier communities, as well as by the pronounced excess of females in the larger eastern cities. Thus in the Yukon Territory, which has no urban community of 1,000 people or more, we find 2,825 males as compared with 1,405 females, or a ratio of 201 to 100. Again, in the district of Cochrane in Northern Ontario there were 148 males for every 100 females, and in the district of Temiskaming in Quebec, 132 males for every 100 females. Furthermore, Census Divisions 15, 16 and 17 in Northern Alberta had respectively 141, 142 and 138 males to 100 females, while in Census Divisions 9 and 10 of Northern British Columbia there were respectively 172 and 178 males to 100 females.

In the larger eastern cities, the disproportion is in the opposite direction. In Montreal, our largest city, the Census of 1931 showed 98.35 males to every 100 females; in Halifax, 93.27; Toronto, 93.75; Saint John, 91.28; Ottawa, 87.43; Quebec City, 88.57; Kingston, 90.86; St. Hyacinthe, 82.77; Outremont, 78.07; and Westmount, 70.36, the lowest proportion of males to females in any city of over 10,000 people. In the West, however, the presence of a large number of young male immigrants turned the scale: Winnipeg, in 1931, had 100.64 males to every 100 females; Calgary, 107.25; Edmonton, 101.69; Victoria, 106.37; and Vancouver, 114.21; Timmins, Ontario, had 123.87, the highest percentage of males to females in any city or town of more than 10,000 people. The excess of males in western cities was, however, quite moderate in 1931 as compared with that in previous census years, for in 1881 Winnipeg had 139.29 males for every 100 females and in 1891 Vancouver, appearing for the first time in the decennial census, recorded 187.58 males to every 100 females.

In the older cities of Canada the proportion of males to females, generally speaking, reached in 1911 its highest point since 1871, as there were a larger number of newly arrived male immigrants than at any other census. The lowest proportion of urban males to females in recent times occurred in 1921 after the male population had suffered as a result of the War and perhaps of its accompanying transfer of females to occupations previously carried on by males. The latest census, 1931, generally indicates a larger proportion of males to females than in 1921. In the

newer western cities, however, there has been a steady downward trend in the proportion of males to females. In Regina, for example, there were 189.2 males to every 100 females in 1911, 107.0 in 1921 and 100.6 in 1931.

The trend in the four leading cities of Canada (Montreal, Toronto, Vancouver and Winnipeg) is given in Table 10, while corresponding figures for other cities will be found at pages 157 to 160 of Volume II of the Census of 1931.

TABLE 10—POPULATION, BY SEX, IN THE FOUR LEADING CITIES OF CANADA, AT EACH DECENNIAL CENSUS, 1871-1931

City	Year	Population			Males to 100 Females
		Total	Male	Female	
Montreal.....	1871	130,833	62,021	68,812	90.13
	1881	177,377	83,163	94,214	88.27
	1891	256,723	122,752	133,971	91.63
	1901	328,172	157,517	170,655	92.30
	1911	490,504	245,422	245,082	100.14
	1921	618,506	300,924	317,582	94.75
	1931	818,577	405,892	412,685	98.35
Toronto.....	1871	58,000	28,029	30,071	95.20
	1881	96,196	46,671	49,525	94.24
	1891	181,215	87,827	93,388	94.05
	1901	209,892	98,097	111,795	87.75
	1911	381,833	189,106	192,727	98.12
	1921	521,803	260,944	270,949	92.82
	1931	631,207	305,427	325,780	93.75
Vancouver.....	1871	-	-	-	-
	1881	-	-	-	-
	1891	13,709	8,942	4,767	187.58
	1901	29,432	17,697	11,735	150.81
	1911	120,847	72,166	48,681	148.24
	1921	168,229	85,591	77,629	110.20
	1931	246,593	131,473	115,120	114.21
Winnipeg.....	1871	241	-	-	-
	1881	7,085	4,048	3,337	139.29
	1891	25,639	13,406	12,233	109.59
	1901	42,340	21,940	20,400	107.55
	1911	130,035	74,406	61,629	120.73
	1921	179,087	89,737	89,350	100.43
	1931	218,785	109,742	109,043	100.64

Age Distribution of the Sexes.—The foregoing facts regarding the varying distribution of males and females between the total rural and total urban populations, although quite serious, are rendered even more striking by an analysis according to age distribution. The disproportion is greater after deduction from the total population is made of children under 15 years of age, since they, if living with their parents, are likely to show approximately equal numbers of boys and girls in any settled community. Indeed it is when the rural and the urban populations are analysed by age groups that the disparity between the sexes assumes an alarming aspect from the biological point of view; from such analyses it is found that the surpluses of the male population in the rural areas and of the female population in the urban areas are greatest at the marriageable ages, which geographical separation of the sexes tends to reduce the number of marriages. This disquieting condition is, of course, not peculiar to Canada; it is characteristic of the modern Western world with its mobility of labour, its great increase in the proportion of female workers, and its more general employment of males in the heavier work of the rural districts, from which many females migrate to take advantage of the opportunities for lighter work in the cities.

The glaring preponderance of males at marriageable ages within the rural population is shown in Table 11, which reveals that in the seven quinquennial age groups, comprising the thirty-five years from 20 to 54 inclusive, the rural males exceed the rural females in every group by percentages varying between a low of 21.19 in the age group from 35 to 39 and a high of 35.56 in the age group from 45 to 49, the percentage in the total for these 35 years being 28.96. It is thus evident that in the rural areas of Canada as a whole there is a very large surplus of males over females at the marriageable ages, which constitutes a menace to family life and tends to lower the marriage rate and birth rate.

TABLE 11—RURAL POPULATION, BY SEX, WITH PERCENTAGE OF MALES TO FEMALES IN EACH QUINQUENNIAL AGE GROUP, CANADA, 1931

Age Group	Males	Females	Excess of Males	Males to 100 Females
All ages.....	2,602,021	2,200,967	401,054	118.22
0 - 4.....	282,874	275,795	7,079	102.57
5 - 9.....	294,042	285,581	8,461	102.96
10 - 14.....	277,684	265,520	12,164	104.58
15 - 19.....	297,805	228,589	39,216	117.16
20 - 24.....	227,092	173,435	53,657	131.41
25 - 29.....	188,505	144,894	43,611	130.10
30 - 34.....	163,188	133,454	29,734	122.28
35 - 39.....	156,733	129,329	27,404	121.19
40 - 44.....	151,815	117,168	34,647	129.57
45 - 49.....	143,002	105,489	37,513	135.56
50 - 54.....	121,250	89,817	31,433	135.00
55 - 59.....	95,621	70,937	24,684	134.80
60 - 64.....	77,686	55,219	19,467	133.44
65 - 69.....	61,609	47,207	14,396	130.50
70 - 74.....	46,002	35,258	10,744	130.47
75 - 79.....	26,289	21,445	4,844	122.59
80 - 84.....	12,678	11,472	1,206	110.51
85 - 89.....	4,771	5,057	-286	94.34
90 and over.....	1,403	1,875	-382	79.63
Specified ages.....	2,601,035	2,200,598	400,437	118.20
Unspecified ages.....	986	369	617	267.21

In the urban areas of Canada the females outnumber the males on the whole as well as at most ages. In 1931 in the age groups from 15 to 30 years the urban communities had a decided excess of females. The quinquennial group from 15 to 19 had only 90.09 males to every 100 females and the group from 20 to 24 only 86.04 per 100, although the next group from 25 to 29 had 95.70. At the ages 15 to 29 years there were 76,488 more females than males in the urban communities of Canada, while there were only 28,758 more females than males in the total urban population; it is therefore evident that in the remaining urban population the males outnumbered the females. The large surplus of females in the age groups from 15 to 29 years might be expected, since it is between these ages that most females are working for wages. Later age groups, from 35 to 59 years inclusive, carry an excess of males over females in the urban communities, an excess which dwindles in the subsequent groups, changing in fact to a substantial deficiency because of the higher mortality of males. Indeed in the urban communities of Canada the age group from 70 to 74 years had 89.15 males to every 100 females, the group 85 to 89 had only 72.02 and the residual group, the smallest percentage of all, 59.91 (Table 12). The deficiencies or surpluses of males per 100 females within both the rural and urban population are depicted by quinquennial age groups in Chart K.

TABLE 12—URBAN POPULATION, BY SEX, WITH PERCENTAGE OF MALES TO FEMALES IN EACH QUINQUENNIAL AGE GROUP, CANADA, 1931

Age Group	Males	Females	Excess of Males	Males to 100 Females
All ages.....	2,772,520	2,801,278	-28,758	98.97
0 - 4.....	260,298	255,448	4,850	101.90
5 - 9.....	278,465	274,661	3,804	101.38
10 - 14.....	265,246	265,601	-355	99.87
15 - 19.....	257,445	285,755	-28,310	90.09
20 - 24.....	235,730	273,968	-38,238	85.04
25 - 29.....	221,471	231,411	-9,940	95.70
30 - 34.....	204,947	207,247	-2,300	98.89
35 - 39.....	202,348	200,053	2,295	101.15
40 - 44.....	195,948	181,168	14,780	108.16
45 - 49.....	178,511	158,209	20,302	112.83
50 - 54.....	146,082	131,532	14,550	111.06
55 - 59.....	103,539	96,928	6,611	106.82
60 - 64.....	79,226	79,466	-240	99.70
65 - 69.....	59,099	63,232	-4,132	93.45
70 - 74.....	42,379	47,761	-5,382	89.15
75 - 79.....	22,728	27,167	-4,439	87.34
80 - 84.....	11,199	13,822	-2,623	81.02
85 - 89.....	3,894	5,407	-1,513	72.02
90 and over.....	1,045	1,751	-702	59.91
Specified ages.....	2,770,795	2,800,587	-29,792	98.94
Unspecified ages.....	1,725	691	1,034	249.64

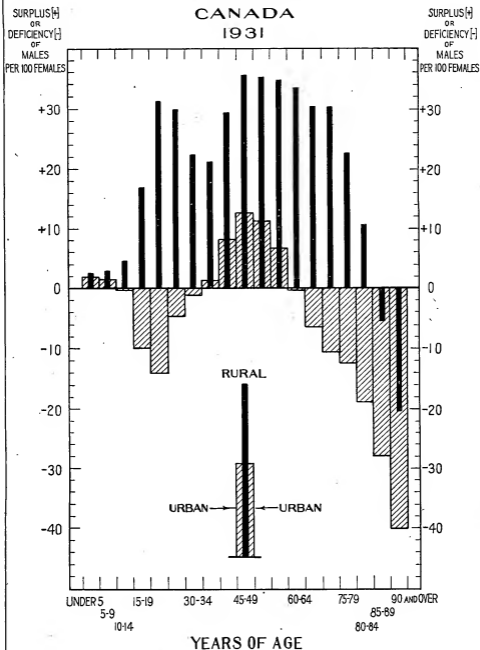
RELATIONSHIP OF MALES TO FEMALES ^(K)

BY CERTAIN AGE GROUPS

RURAL AND URBAN

CANADA

1931



See Tables II and I2

From the biological standpoint, the most notable fact in Table 12 is that 791,134 females of ages 15 to 29 years lived in the urban communities in contrast to only 714,646 males of the same ages, a ratio of 111 females to 100 males. It would be more appropriate, however, to compare females aged 15 to 29 inclusive with males aged 20 to 34 inclusive, since it has been established in the Annual Report on Vital Statistics that the average age of bridegrooms is between four and five years more than that of brides. But such a comparison would show a still greater proportion of females in urban residence, for there would be only 662,148 males against the 791,134 females; in other words, there were in the urban communities in 1931 about 119 females of ages 15 to 29 inclusive for every 100 males of ages 20 to 34 inclusive.

That the town and city females in the later 'teens and the twenties show the greatest preponderance over the males would appear to be largely accounted for by the percentages of gainfully occupied females from 15 to 29 years of age to total females of the same ages. These figures climb rapidly in the later 'teens to a peak of 48.4 p.c. at the age of 20 years, after which they descend more or less steadily, but even at 29 years of age 21.6 p.c. are gainfully occupied. In the following five years (30 to 34), the percentages decline further, only 12.2 p.c. of females being gainfully occupied at the age of 34 years. (See Table 13 and second half of Chart L on Employment Analyses).

TABLE 13—GAINFULLY OCCUPIED FEMALES, AS PERCENTAGES OF TOTAL FEMALES, BY SINGLE YEARS OF AGE FROM 15 TO 34 YEARS, CANADA, 1931

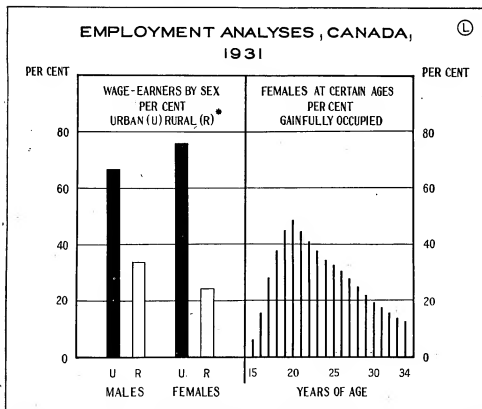
Age	P.C. Gainfully Occupied	Age	P.C. Gainfully Occupied
15.....	5.9	25.....	32.6
16.....	15.3	26.....	30.1
17.....	27.7	27.....	27.4
18.....	37.7	28.....	24.5
19.....	44.9	29.....	21.6
20.....	48.4	30.....	19.1
21.....	44.4	31.....	17.1
22.....	40.8	32.....	15.3
23.....	37.7	33.....	13.5
24.....	34.5	34.....	12.2

The concentration of female wage-earners of Canada in the urban communities with a population of 1,000 and over is illustrated by Table 14 and the first half of Chart L, which show the percentage urban and rural, as well as corresponding figures for males. Urban females, working for wages, comprise about four-fifths of the total female wage-earners. From this table it may be observed that 76.09 p.c. (over three-quarters) of the total female wage-earners are concentrated in urban communities of 1,000 population and over, and there is a strong probability that about 80 p.c. of the total are resident in all urban communities (including those under 1,000). Most of the remaining female wage-earners are resident in distinctly rural areas and are doubtless mainly rural school teachers, nurses and domestic servants. It might be objected that nearly as large a percentage of the male wage-earners (66.26) as of the female wage-earners (76.09) are in urban communities, but the former percentage would be greatly reduced if the table contained all gainfully occupied rather than only the wage-earners, since the gainfully occupied males, including 700,000 operating farmers, etc., are very much more rural than the male wage earners alone.

TABLE 14—WAGE-EARNERS, NUMERICAL AND PERCENTAGE DISTRIBUTION, BY SEX, IN RURAL POPULATION (INCLUDING URBAN MUNICIPALITIES WITH LESS THAN 1,000) AND IN URBAN (EXCLUDING SUCH MUNICIPALITIES), CANADA, 1931¹

Locality	Males		Females	
	No.	P.C.	No.	P.C.
CANADA.....	2,022,260	100.00	547,837	100.00
Urban (1,000 and over).....	1,330,933	66.26	416,832	76.09
Urban (under 1,000) and rural.....	682,307	33.74	131,005	23.91

¹ For persons of 10 to 19 years of age in urban areas of 5,000 to 15,000 population, the figures were estimated on the basis of percentages for corresponding ages in cities of 30,000 and over.



See Table 14

*U - Urban Communities of 1000 and over, R - Remainder of Population

See Table 13

Population under Five Years of Age.—In times past when there was no satisfactory system of vital statistics existing in Canada, an endeavour was made to obtain an approximation of the birth rate from the proportion which the number of infants under 1 year of age, as reported at the census, bore to the total infant population. The result of this procedure had some validity, although it did not allow for those born and dying within the census year. Usually the number of infants reported in the rural areas formed a larger percentage of the total rural population than the number of infants reported in urban districts formed of the total urban population, indicating a higher birth rate among the ruralites than among the urbanites—a phenomenon which is fairly common throughout the Western world. This fairly constant condition is indicated also in the results of the Census of 1931, when it was ascertained that 2.16 p.c. of the total rural population and only 1.78 p.c. of the total urban population were less than one year old; indeed, in cities of 30,000 population and over only 1.67 p.c. of their total were under 1 year of age.* Clearly from this it would appear that, other things being equal, the larger the community, the lower the percentage of its infant population to its total population.

The same thing is found to be true of children aged 1 to 4 years inclusive. In rural communities 9.47 p.c. of the total population are between these ages, while in the entire urban population 7.48 p.c. are within this group and in the cities of 30,000 and over only 6.89 p.c.

The phenomenon of a larger percentage of infants among the rural than among the urban population is common to most of the provinces: in Prince Edward Island, 2.03 p.c. of the rural and only 1.93 p.c. of the urban population are under 1 year of age; in New Brunswick, 2.50

* These figures and several others in succeeding paragraphs are from the Census of Canada, 1931, Vol. III, Table 1, p. 2 and Table 2, p. 8.

and 1.84; in Quebec, 2.65 and 2.12; in Ontario, 1.84 and 1.61; in Manitoba, 2.00 and 1.39; in Saskatchewan, 2.23 and 1.79; in Alberta, 2.27 and 1.75; and in British Columbia, 1.60 and 1.20. The single exception was Nova Scotia, which had 2.00 p.c. of the rural population and 2.07 p.c. of the urban population less than 1 year old.

Miscellaneous Data on Age Distribution.—A larger part of rural than of urban population is, generally speaking, below the ordinary working age; in fact, in 1931, children in the age groups from 0 to 4 years, from 5 to 9 and from 10 to 14, comprise, respectively, 11.63 p.c., 12.07 p.c. and 11.31 p.c. of the rural population, as compared with 9.26 p.c., 9.92 p.c. and 9.52 p.c., respectively, of the urban. Summing up these three groups, we find that 35.01 p.c. of the rural and only 28.70 p.c. of the urban population are under 15 years. This phenomenon exists also, in a modified form, in the next age group (from 15 to 19 years), which contains 10.33 p.c. of the rural but only 9.75 p.c. of the urban population.

The people in the main working period of life, extending from 20 to 65 years of age, include a larger percentage in the urban areas than in the rural. Thus the age group from 20 to 24 years contains in 1931 only 8.36 p.c. of the rural but 9.14 p.c. of the urban population, and that from 25 to 29 years, 6.94 p.c. and 8.13 p.c., respectively. Indeed, 56.13 p.c. of the urban population are within the 45 year group from 20 to 65 as compared with 48.90 p.c. of the rural. Clearly, younger people and those in the prime of life seek the towns. This, however, in the earlier period of life applies to an even greater extent to young women than to young men, if their answers to the census enumerator may be trusted. While only 7.88 p.c. of the female rural population are from 20 to 24 years of age, no less than 9.78 p.c. of the female urban population are between these ages. In fact, in the cities of 30,000 and over, collectively, 10.35 p.c. of the female population belong to the age group from 20 to 24 years.

Again, a higher percentage of older persons is found among the ruralites than among the urbanites, either because the elderly people in the rural districts are the survivors of the period when the rural population of Canada was vastly larger than the urban, or because there is a tendency for urban dwellers to move to the country for their declining years. Both causes undoubtedly contribute to this phenomenon; and, in addition, the slower tempo of life in the rural districts may be conducive to longevity. At any rate, it is quite true that in the quinquennial age groups over 65 years (an ordinary age of retirement from active occupation), there is a larger percentage of rural population than of urban. In the age group from 65 to 69 years in 1931 there were 2.27 p.c. of the rural and 2.19 p.c. of the urban population and in the next group (70 to 74) there were 1.69 p.c. of the rural and 1.62 p.c. of the urban population. The age groups 75 to 79 and 80 to 84 contained respectively 0.99 p.c. and 0.50 p.c. of the rural population as compared with 0.91 p.c. and 0.45 p.c. of the urban. Finally, the population of 85 years and over constituted 0.26 p.c. of the rural population but only 0.22 p.c. of the urban.

Summary.—The main conclusions that have been reached from the study made in this chapter are:

(1) In a new country like Canada an excess of males is due mainly to immigration, so that a census after a decade of heavy immigration shows a greater degree of masculinity than one after a decade of relatively light immigration.

(2) A high masculinity generally prevails in the rural areas and a low masculinity in the urban. Extension of the analysis to age groups reveals a very high masculinity in the rural areas at ages 20 to 29 and 45 to 74 years, while in the urban areas particularly low masculinity is found at ages 20 to 24, when the greatest proportion of females is gainfully occupied, and again in the late quinquennial age periods after 70, when the mortality rate of males is higher.

(3) In urban communities masculinity ordinarily tends to decline as the population thereof increases, our 7 cities with over 100,000 people having a lower masculinity than the smaller cities; however, in some smaller cities, particularly the economically dependent satellites, the masculinity is extraordinarily low.

(4) The low masculinity in the larger cities, more particularly in the earlier period of life (at the ages from 15 to 30 years), is accounted for by the fact that, at those ages much more than at any others, rural females, seeking suitable employment, are attracted to urban centres, chiefly to those near their homes. Of 548,000 female wage-earners in the country in 1931, about 417,000 were in urban communities of 1,000 population and over and only about 131,000 in rural areas, including urban communities of under 1,000.

(5) The surpluses of the male population in the rural areas and of the female population in the urban areas are greatest at the marriageable ages, which geographical separation of the sexes tends to reduce the number of marriages.

(6) In rural Canada the newest districts have the highest masculinity.

(7) The country as distinguished from the town is still the "nurse of men". The rural infants form a larger percentage of the total rural population than do the urban infants of the total urban. Indeed, 35.01 p.c. of the rural population falls within the first three quinquennial age groups, as compared with only 28.70 p.c. of the urban.

(8) In the groups from 20 to 65 years of age, we find 56.13 p.c. of the urban as compared with 48.90 p.c. of the rural, indicating that in the main working period of life there is a preference for urban communities, probably because they provide more remunerative occupation than do the rural.

(9) Finally, a distinctly larger proportion of aged people (above 65 years) live in the rural areas than in towns and cities; for this there are several explanations, including the following,—first, the aged element of the population includes the survivors of a time when rural dwellers in Canada were much more numerous than urban dwellers; secondly, there would appear to be some migration of older urban dwellers to country districts, where the cost of living is ordinarily lower; and thirdly, the generally recognized slower tempo of life in rural districts tends to promote longevity.

CHAPTER VI

CONJUGAL CONDITION AND BIRTH RATE

Introduction.—Conjugal condition, next to age and sex, is probably the most important attribute of population, more particularly since it is a guide to the nation's potentialities of replacing the older generation by the younger and of increasing further. In Canada between 96 p.c. and 97 p.c. of all births are to married mothers; the remaining 3 p.c. to 4 p.c., the illegitimate, comprise by no means an inconsiderable number, but the mortality rate among them, being in all probability much heavier than among the legitimate, reduces their effect as a factor in the growth of population. Immigration, the only other source of increase, is unlikely to be so important in the future as it has been at certain periods in the past (notably 1901 to 1914). Population growth must accordingly result in the main from a natural surplus of births over deaths. This, as already explained, is contingent principally upon the current conjugal condition of the existing population, the chief factor therein being the percentage of married women in the child-bearing period of life, especially of those at the ages when fertility is likely to be at or near its maximum.

The Married.—Some introductory reference must be made to the conjugal condition of the Canadian people as a whole before the rural and urban aspect of the study can be intelligently discussed. In this northern country, where the human being matures later than in tropical and subtropical areas, almost all people under 15 years of age are single. Now, each succeeding census in Canada in recent times has shown that the percentage of the population under 15 years of age has been steadily declining, having fallen from 41.55 p.c. of the total population of the four original provinces in 1871 and 38.72 p.c. of the population of the Dominion in 1881 to 31.63 p.c. in 1931.

Since marriage is the normal condition among adults, the percentage of married persons to the total population might be expected to have increased or at least to have remained almost unchanged since 1881; the fact is that the percentage increased markedly, having been only 29.86 p.c. of the male and 30.63 p.c. of the female population in 1871, as compared with 37.83 p.c. and 38.74 p.c. respectively in 1931. The figures for the different censuses since 1871, given in Table 15, indicate a steady advance in the proportion of the married to the total population. This increase might, at first sight, be considered as favouring a higher crude birth rate, especially in more recent years, but the birth rate has been declining with a consequent decline in the proportion of young people under 15 years of age to the total population.

TABLE 15—PERCENTAGE OF TOTAL POPULATION MARRIED AND AT ONE TIME MARRIED, BY SEX, CANADA, AT EACH DECENNIAL CENSUS, 1871-1931

Year	P.C. in the Married State		P.C. Having at Some Period Been Married ¹	
	Male	Female	Male	Female
1871.....	29.86	30.63	31.83	35.04
1881.....	31.55	32.28	33.37	37.41
1891.....	32.36	33.37	34.91	38.81
1901.....	33.76	34.51	36.44	40.30
1911.....	34.85	36.97	37.23	42.35
1921.....	37.49	38.32	40.22	43.96
1931.....	37.83	38.74	40.58	44.53

¹ Includes widowed and divorced.

The more important question, therefore, is not the ratio of the married to the total population, but that of the married population to the total of marriageable age, in other words, to the total population 15 years of age and upward. This low limit of age is more appropriate to females than to males, since comparatively few of the latter go through the marriage ceremony within the 15 to 19 quinquennial period, the fourth quinquennium of their existence, and yet, in general statistical work, where ages are grouped by quinquennial periods, the proportions married are

usually stated in terms of the total number of persons 15 years of age and over; they are ordinarily designated as the adult population and, for the sake of brevity, will hereafter be so described. The percentages of the married, by sex, to the total adult population of each sex, as ascertained at the seven decennial censuses since Confederation, are given in Table 16; the higher rate for females throughout is mainly attributable to the high masculinity of the Canadian population.

TABLE 16—PERCENTAGE OF POPULATION 15 YEARS OF AGE AND OVER IN THE MARRIED STATE BY SEX, CANADA, AT EACH DECENNIAL CENSUS, 1871-1931¹

Year	Males	Females
	p.c.	p.c.
1871.....	52.28	52.59
1881.....	51.47	52.28
1891.....	50.89	52.59
1901.....	Data not available.	
1911.....	51.09	56.67
1921.....	56.07	59.24
1931.....	54.74	57.35

¹ These figures are approximations and would vary slightly, especially for females in 1891, depending chiefly on adjustments relating to the method of treating unspecified ages.

It will be noted from this table that in the present century the percentage of married persons among both males and females of 15 years and over is distinctly higher than in the last century. This tendency is observable particularly among females at the last three censuses, while the large surplus of young men in the 1911 population, as a result of the enormous immigration of the first decade of the twentieth century, is at least partly responsible for the absence of the tendency to any extent among males until 1921, the year which showed the maximum percentage of married among both the male and the female adult populations. The high percentage of the married population among the adults of both sexes in 1921 may have been partly due to the loss of life among single males during the Great War, but the more important cause would appear to have been the great demand for, and the high price of, labour during and after the War, when good wages encouraged both young soldiers and young civilians, as well as many of the more mature, to believe that they would be able to provide for a family and accordingly there were many marriages. As these unusual conditions of 1921 had ceased to exist by 1931, the proportion of married to the total population in the 15 to 19 age group was much lower in the later year. It may be presumed that marriages of persons who were in this group at the Census of June 1, 1931, had been quite recent and that the proportion of them must have been affected by the economic depression prevailing during the year or so preceding this latest decennial census.

The proportions of married males and females to total adult population in various age groups are presented in Table 17; in such a central age group as that from 35 to 44 the percentage of married males was higher in 1931 than in 1911 or 1921, and the percentage of married females was higher in 1931 than in 1891, 1911 or 1921.

TABLE 17—PERCENTAGE OF POPULATION 15 YEARS OF AGE AND OVER IN THE MARRIED STATE, BY VARIOUS AGE GROUPS AND SEX, CANADA, AT EACH DECENNIAL CENSUS, 1891-1931

Year	Age Groups						
	15-19	20-24	25-34	35-44	45-54	55-64	65 and over
MALES							
1891.....	0.37	17.71	55.52	80.99	84.79	82.74	69.48
1901.....	Data not available						
1911.....	1.20	16.22	52.61	74.89	80.70	80.47	67.85
1921.....	0.56	17.90	61.20	78.89	81.47	79.51	67.36
1931.....	0.34	14.24	67.86	79.89	81.39	78.28	65.23
FEMALES							
1891.....	4.45	32.83	68.15	79.99	77.07	66.68	40.52
1901.....	Data not available						
1911.....	6.96	39.83	71.30	80.45	76.86	66.21	39.98
1921.....	6.61	42.36	74.47	82.50	78.15	67.06	39.78
1931.....	5.07	36.55	72.66	82.72	79.56	68.28	40.21

The rural and urban percentages of the married involve further brief reference to figures on sex distribution which show that the rural areas of Canada had in 1931 a very considerable excess of males over females (401,054), the former numbering 2,602,021 as compared with 2,200,967 females.* The surplus of males, however, was comparatively slight in the age groups under 15 years of age, which were almost wholly composed of children living with their parents and which consisted of 854,600 males and 826,896 females, an excess of only 27,704 males. Among the population of 15 years and over, males numbered 1,746,435, an excess of 372,733 over the 1,373,702 females.† In other words, while in the total rural population of 1931 there were 118 males to 100 females, in the adult age groups (from 15 upwards) the proportion was 127 to 100, thereby constituting a great excess of males among the rural adult population of marriageable ages. This disparity of the sexes naturally tends to produce a low percentage of married male population to total adult male population in the rural districts.

The urban areas of Canada contained a population of 2,772,520 males and 2,801,278 females in 1931, or about 99 males to 100 females. In the age groups under 15 years, there were 804,009 males and 795,710 females, a surplus of 8,299 males. In the age groups 15 years of age and over, there were 1,966,786 males and 2,004,877 females, a surplus of 38,091 females.‡ This surplus of females is found entirely in the age groups from 15 to 29 inclusive, where there were 791,134 females to 714,646 males, an excess of 76,488 females, which however may be due, to some extent, to mis-statements of ages. At any rate, in the adult age groups there were only 98 males to 100 females in urban communities, as compared with 127 males to 100 females in rural areas.

The main reason for the aggregation of young women in urban communities is indicated by the occupational statistics of the Census of 1931. Out of 666,021 females reported as engaged in gainful occupations in 1931, no fewer than 547,837 were classified as wage-earners, of whom more than 78 p.c. were resident in urban communities of 1,000 population and over, and less than 22 p.c. in those under 1,000 and in rural areas. The age distribution of gainfully occupied females indicates that the great majority of these women were under 30 years of age; in other words, they were within the ages at which the excess of women in urban areas is found to exist.

From the sex distribution of the adults in rural and urban communities which has just been outlined, one would expect that the proportion of married males would be more for urban than for rural areas; similarly, one would expect that among rural females there would be a larger percentage of married persons than among urban females, especially since a wife is popularly considered to be a greater asset to a farmer than she is likely to be to a townsman. The percentages in both cases, indeed, prove this assumption. In 1931 we find that on the one hand 51.34 p.c. of adult rural males and 62.06 p.c. of adult rural females were in the "married" category, while on the other hand 57.76 p.c. of the adult urban males were in the conjugal state, as compared with only 54.12 p.c. among the adult urban females. It is evident, therefore, that the probability of adults (15 years and over) being married is substantially greater for rural females than for rural males and somewhat greater for urban males than for urban females.

The Census of 1921, as already stated, showed an extraordinarily high percentage of married persons of each sex in both the rural and the urban population. The main cause was most likely the unusual demand for labour at high wages, arising out of the Great War with its inflation and the post-War activity or pseudo-prosperity, while the War-time custom and modern industrial practice of "making the most of the time allowed" was also a factor tending to increase the number of marriages contracted during the War and immediately afterward. This stimulus to marriage had disappeared, of course, long before the Census of 1931, when the marriage rate in the former Registration Area of Canada (*i.e.*, all the provinces except Quebec) was only 6.7 per 1,000 of the population, as compared with 8.0 per 1,000 in 1921, the earliest year for which this figure is available. The natural result was an abnormal decline in the proportion of married to total population of the Dominion in 1931 in both rural and urban areas—a decline affecting particularly the earlier ages. Whereas in 1921, 58.03 p.c. of the total rural population of 15 years and over were in the married state, in 1931 the corresponding figure was only 56.06 p.c. Of the rural males at these ages the married constituted 53.57 p.c. in 1921 and only 51.34 p.c. in

* These figures are from the Census of Canada, 1931, Vol. III, Table 1, p. 2, in which Royalty (an unincorporated suburb of Charlottetown, P.E.I.) has been regarded as urban, in order to make cross-classifications comparable with earlier censuses.

† Ruralites of unstated ages totalled only 1,355, the males numbering 986 and the females 369.

‡ Urbanites of unstated ages totalled only 2,416, the males numbering 1,725 and the females 691.

1931. Among rural female adults, 63.57 p.c. in 1921 and 62.06 p.c. in 1931 were returned as "married". A similar decline in the proportion of married persons to total adult population was recorded in urban communities, where in 1921 there were 57.78 p.c. recorded as married and in 1931 only 55.92 p.c., the percentage of married males declining from 59.95 p.c. to 57.76 p.c. and that of married females from 55.69 p.c. to 54.12 p.c. Thus all four main groups of the adult population (15 years of age and over)—rural males, rural females, urban males and urban females—showed a decline in the percentages of married persons to the total in 1931 as compared with 1921, and these declines were almost equal proportionally in the four classes, those for the males being only slightly larger than for the females.

A study of the proportion of the married to total adult population by age groups proves that changes in the total number of married people, whether increases or decreases, are largely determined by the number of marriages currently taking place. These, in turn, as of course also the marriage rate, tend to rise in periods of general prosperity and to decline in times of economic depression, especially among young persons who ordinarily have few realized assets. The number of marriages and the general marriage rate for the eight provinces which have been included in the Registration Area of Canada from 1921 to the present (Table 18) sagged in the depression years 1922 and 1924 and again even more seriously in the economic crisis following 1929. Unfortunately we are unable to secure the figures for the years prior to 1921, so that we have no comparisons of the numbers and rates of marriages before that date with those at the Censuses of 1921 and 1931, but the figures for 1932 to 1935 show that the rates in the worst two years of the depression (1932 and 1933) were the lowest in this fourteen year record and rose to only the 1930 level in 1935. Although it has not been ascertained that these data have any definite relevance to the census figures of 1931, they do suggest that the proportion of the married to the total population has shown a further decline since that year.

TABLE 18—TOTAL MARRIAGES AND CRUDE MARRIAGE RATES PER 1,000 POPULATION IN THE FORMER REGISTRATION AREA (ALL PROVINCES OF CANADA EXCEPT QUEBEC), 1921-37

Year	Number of Marriages	Rate per 1,000 Population
1921.....	51,073	8.0
1922.....	47,811	7.4
1923.....	49,102	7.5
1924.....	47,538	7.2
1925.....	47,217	7.0
1926.....	48,831	7.1
1927.....	50,964	7.3
1928.....	55,185	7.8
1929.....	57,678	8.0
1930.....	53,114	7.2
1931.....	49,808	6.7
1932.....	47,416	6.3
1933.....	46,528	6.3
1934.....	54,850	7.0
1935.....	56,916	7.2
1936.....	59,250	7.5
1937.....	62,898	7.9

¹ These figures are subject to minor revision.

Table 19 presents by quinquennial age groups the percentages of married males and females to total adult males and females resident in rural areas and urban communities respectively, as ascertained at the Censuses of 1921 and 1931. On the whole, the proportion of aggregate married population to total adults declined in the last decade. This decline, however, would be less striking if it were not for the unusually high proportion attained in 1921.

TABLE 19—PERCENTAGE OF MARRIED TO TOTAL ADULT RURAL AND URBAN POPULATION (15 YEARS AND OVER), BY QUINQUENNIAL AGE GROUPS AND SEX, CANADA, CENSUSES OF 1921 AND 1931

Age Group	Males		Females		Total	
	1921	1931	1921	1931	1921	1931
RURAL						
All age groups 15 and over.....	53.57	51.34	63.57	62.06	58.03	56.06
15 - 19.....	0.52	0.33	8.21	6.37	4.10	3.11
20 - 24.....	16.49	12.72	49.88	44.44	31.77	26.43
25 - 29.....	48.66	44.11	77.04	75.28	61.52	57.66
30 - 34.....	67.27	60.50	85.65	85.85	75.42	75.20
35 - 39.....	74.47	70.02	88.03	88.54	80.33	81.68
40 - 44.....	77.34	78.70	87.32	88.37	81.64	82.91
45 - 49.....	78.95	78.88	85.65	87.08	81.84	82.36
50 - 54.....	78.85	77.91	81.89	83.37	80.16	80.23
55 - 59.....	78.92	77.08	77.69	78.94	78.38	77.87
60 - 64.....	76.34	74.41	69.15	70.40	73.21	72.72
65 and over.....	66.53	63.94	44.20	45.25	56.36	55.63
Not stated.....	5.92	28.27	8.12	57.45	7.44	34.76
URBAN						
All age groups 15 and over.....	59.95	57.76	55.09	54.12	57.78	55.92
15 - 19.....	0.62	0.34	5.08	4.03	2.99	2.28
20 - 24.....	19.50	15.71	36.52	31.55	28.99	24.22
25 - 29.....	54.28	49.89	63.97	61.27	59.41	55.71
30 - 34.....	73.75	72.24	75.66	75.01	74.72	73.63
35 - 39.....	80.67	80.35	78.75	78.87	79.74	79.62
40 - 44.....	83.18	83.42	78.13	79.14	80.77	81.37
45 - 49.....	84.31	84.13	75.81	77.65	80.25	81.09
50 - 54.....	83.82	83.39	70.44	73.22	77.29	78.57
55 - 59.....	82.90	81.85	65.45	67.15	74.14	74.74
60 - 64.....	79.93	78.85	55.29	58.53	67.90	68.68
65 and over.....	68.42	66.62	35.44	36.34	51.09	50.60
Not stated.....	13.24	16.81	12.07	37.45	12.63	22.72

The falling off in the proportion of the married to the total adults in the last decade has been large in the younger age group (15-29-years). Thus the percentage of married to total rural females in the age group from 15 to 19 years inclusive, fell from 8.21 p.c. in 1921 to 6.37 p.c. in 1931, while for urban females the percentage declined from 5.08 to 4.03. Again, in the age group from 20 to 24 years, 49.88 p.c. of the rural females in 1921 were among the married but in 1931 only 44.44 p.c. The corresponding percentages for urban females in the age group from 20 to 24 were 36.52 and 31.55. Once more, in the age group from 25 to 29 the married rural females formed 77.04 p.c. of the total rural females in 1921 and 75.28 p.c. in 1931, while among urban females the percentages were 63.97 and 61.27. These facts for the three quinquennial age groups under 30 years of age indicate two things: first, that in each age group there is a larger percentage of rural than of urban females married; and secondly, that the proportion of the married to the total female population in each of these age groups declined between 1921 and 1931.

The tendency to decline between 1921 and 1931 is also evident among the males of these ages. Among rural males of the age group 15 to 19, the proportion of 0.52 p.c., recorded in 1921 as married, had fallen in 1931 to 0.33 p.c. The corresponding percentages in urban areas were 0.62 and 0.34. Again, in the age group from 20 to 24, the percentage of married males fell from 16.49 in 1921 to 12.72 in 1931 among the rural population and from 19.50 to 15.71 among the urban. Once more, in the age group from 25 to 29 the proportion of married males among the rural population declined from 48.66 p.c. to 44.11 p.c. and among the urban population from 54.28 p.c. to 49.89 p.c. Accordingly, in the comparatively short period of ten years between 1921 and 1931, there has taken place among both the rural and the urban inhabitants in the younger adult age groups a very pronounced decline in the proportion of the married to the total population.

Amongst the older population, however, whether rural or urban, there has occurred no such pronounced decline in the proportion married. On the contrary, while the percentages throughout are somewhat higher among the rural than among the urban population, they have

remained fairly constant from 1921 to 1931. Indeed, in certain age groups, the proportion married was higher in 1931 than in 1921 among both the ruralites and the urbanites. The rural males of ages 35 to 44, for example, had a larger proportion in the married state in 1931 than in 1921, and the same was true of all rural females aged 30 and over. Among urbanites, the males from 40 to 44 years of age showed a slightly higher percentage married in 1931 than in 1921 and the females of all the age groups from 35 years upward had increased in varying degrees.

The rather peculiar fact that in this decade, 1921 to 1931, the percentage of married to total adult population has declined among females under 30 and has increased among those over that age is not easy to explain; but, as regards the latter (the increases over 30 years of age) it may be suggested that we are witnessing the effect of the high marriage rate of the War and early post-War period ten or fifteen years after this wave of marriages swept across the country. § The impulse then given survives in a high "married" proportion among people in their thirties and forties. Amongst other factors contributing to the declining marriage rates for younger people are the following: first, the total number of gainfully occupied females, by far the greater proportion of whom are residents of urban communities, increased between 1921 and 1931 by 36 p.c., while the aggregate population increased by only 18 p.c.; and secondly, the economic depression which had begun some twenty months before the date of the Census of 1931, had cut down the number of marriages of young people during that period. The percentage of the married of all ages to total adult population also decreased markedly in 1931 from the abnormally high point in 1921, but the percentage thereof based on total population, including children under 15 years of age, did increase at least fractionally between these years and very substantially between 1871 and 1931.

The Birth Rate.—Despite the advance in the percentage of married to total population at the past six censuses, there has been a very considerable reduction in the birth rate. As a result of researches made at the Dominion Bureau of Statistics, it has been established that the decline in the birth rate since 1871 is not accounted for by the percentage changes in potential married mothers, outlined in the preceding section of this chapter. If in every census year the same legitimate birth rate as in 1931, 2.24 p.c., had prevailed for the married females of each quinquennial age period, the calculated rates would have risen from 2.12 p.c. in 1871 to 2.16 in 1891, 2.34 in 1911 and 2.43 in 1921—in fact, there would have been some increase in every census year between 1871 and 1921, with the possible exception of 1901 when complete data on this point were not available.* And yet the proportion of infants under 1 year of age to the total population, which is the best available indication of the actual crude birth rate in the earlier census years and the most comparable figure for the seven decennial censuses, declined from 3.06 p.c. in 1871† to 2.80 in 1881, 2.49 in 1891 and 2.45 in 1901; it rose to 2.57 p.c. in 1911, fell to 2.39 in 1921 and with a rapid drop reached a low point of 1.95 p.c. in 1931.‡ Broadly speaking, these figures indicate a very much lower crude birth rate in 1931 than in 1871, more especially in view of the fact that infantile mortality was very much higher in 1871. The decline in the crude legitimate birth rate to a very low level in 1931 was not due to the factor of age distribution of the married females, since this distribution in 1931 was rather more favourable to a high birth rate than in 1871, 1881 or 1891, although rather less favourable than in 1911 or 1921.

Since births are ordinarily reported in the place where they occur, irrespective of the place of residence, and since, therefore, all births in hospitals are usually accredited to urban communities, it is difficult to obtain satisfactory rural and urban statistics on births and birth rates. For this reason, a special study of the matter was made under the direction of Mr. E. S. Macphail, who was Chief of the Demography Branch of the Dominion Bureau of Statistics; he was assisted by Mr. W. R. Tracey, Chief of the Vital Statistics Branch. The results of the study have been published in a "Special Report on Births in Canada according to Place of Residence of Mother, 1930-2".

§ This suggestion is borne out by the fact that the gain in the 1931 proportion of married males was practically confined to the age groups from 35 to 50 years, which represent those who were marrying in large numbers during the War and the immediate post-War period.

* These figures are from the Census of Canada, 1931, Vol. I, Chap. IV, p. 1.

† The 1871 figure is for the four original provinces in which that Census was taken. These provinces, however, contained 94.5 per cent of the 1871 population of all the areas now included in the Dominion.

‡ These figures are from Canada Year Book, 1938, Table 11, p. 136.

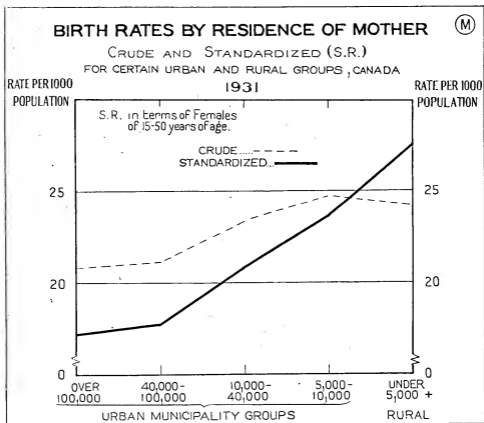
In this Report, besides the crude birth rates by place of residence, computed on the 1931 Population Census, the number of births to mothers resident in each of the important communities was averaged for the three years surveyed and was compared with the total number of women between the ages of 15 and 50 reported in these communities at the census date of June 1, 1931, which was practically the middle point of the three-year period. The procedure for calculating the standardized birth rate from these figures was as follows:

(a) Expected birth rates were computed by dividing the female population of each community between the fifteenth and fiftieth birthday into quinquennial age groups and applying to each age group the average annual birth rate for that group obtaining in the Dominion as a whole over the three years 1930-2, then summing the births thus computed for the various age groups and dividing the sum by the total population of the community.

(b) The standardized rates were then computed from the crude and expected rates by means of the following equation, in which S.R. means standardized rate, E.R. expected rate and C.R.

crude rate:—S.R. for a given community = $\frac{\text{E.R. for Canada}}{\text{E.R. for the given community}} \times \text{C.R. for the given community}.$

When this procedure had been completed, standardized rates were calculated for provinces, for larger urban communities and for the remainder of the country. The crude, expected and standardized rates are summarized in Table 20, and the crude and standardized are depicted in Chart M.



See Table 20

Figures represent averages of the 3 years, 1930-2

TABLE 20.—CRUDE, EXPECTED AND STANDARDIZED BIRTH RATES, BY CERTAIN GROUPS OF URBAN MUNICIPALITIES OF OVER 5,000 POPULATION AND RESIDUAL "RURAL" GROUP, CANADA, AVERAGE OF 1930-2

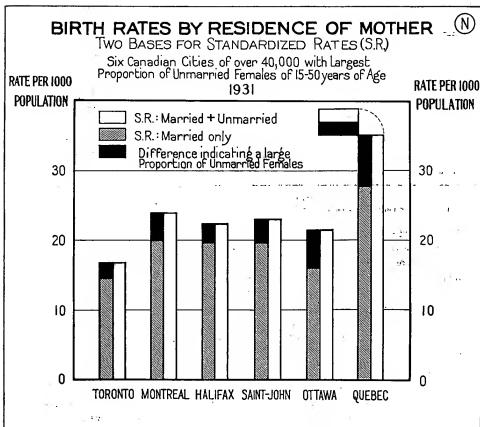
Group	Rates per 1,000 Population		
	Crude	Expected	Standardized
CANADA ¹	23.1	23.0	23.1
Cities of 100,000 and over.....	20.8	27.9	17.1
Cities of 40,000 - 100,000.....	21.1	27.5	17.7
Cities and towns of 10,000 - 40,000.....	23.3	25.7	20.8
Cities and towns of 5,000 - 10,000.....	24.7	24.1	23.6
Remaining parts (mainly rural) ²	24.1	20.2	27.5

¹ Excluding Yukon and Northwest Territories.² Comprising cities and towns under 5,000, villages and all rural parts.

The standardized figures indicate considerably higher birth rates in rural areas than in urban communities. However, since all females between 15 and 50 years of age are included in this computation, it is obvious that the very low standardized birth rates for the bigger cities are mainly due to the large proportion of unmarried female residents of these communities. Accordingly, in the same study, the influence which these unmarried women of child-bearing ages have in reducing the birth rate was eliminated, another standardized birth rate having been calculated from the number of married women in each of the seven quinquennial age groups from 15 to 50 years of age; the necessary data were available, however, only for cities of 30,000 and over.

Birth rates standardized on the basis of (1) *total* women in each quinquennial age group between 15 and 50 and (2) *married* women in the same quinquennial age groups, are given side by side for each city of 40,000 population and over in Table 21, columns A and B, and the difference between the two rates is shown in column C. A small difference between the rates for any city indicates that there is only a normal number of unmarried women between the ages of 15 and 50 in that city. A much higher rate in B than in A for a given city signifies an exceptionally large number of unmarried women; in other words, the marital condition of the women of child-bearing ages in such a city is more unfavourable to a high birth rate than in Canada as a whole. A much smaller rate in B than in A denotes the opposite. The city of Ottawa, for example, has a standardized rate of only 15.8 in the first column but of 21.2 in the second; the difference between the two, 5.4, indicates that Ottawa contains an unusually large proportion of unmarried women at the child-bearing ages, which is due, in the main, to the large proportion of female employees in the Civil Service. A much greater disparity in the same direction, 13.4, exists for the city of Quebec, where the standardized rate in the first column is 27.4 and in the second 40.8.

The two standardized rates for the six Canadian cities of over 40,000 with the largest proportion of unmarried females at these ages, *viz.*, Quebec, Ottawa, Montreal, Saint John, Halifax and Toronto, are compared in Chart N. The disparity in the rates is in the opposite direction in Verdun and Windsor, thereby signifying that the marital condition of the female population of child-bearing age is more favourable to high fertility in these two cities than in the country as a whole. Hamilton with a standardized rate of 17.1 in the first column and of 17.0 in the second and Calgary with 16.4 and 16.5 respectively, stand between the two extremes, the conjugal condition of the female population of child-bearing ages being evidently about as favourable to a high birth rate in these two cities as in the whole country. The proportion of married females in quinquennial age groups of the child-bearing period in the cities of Hamilton, Ottawa and Quebec, as compared with that in the Dominion as a whole, tends to confirm these conclusions (Table 22).



See Table 21

Figures represent averages of the 3 years, 1930-2

TABLE 21—STANDARDIZED BIRTH RATES FOR CITIES OF 40,000 AND OVER, ON THE BASES OF (A) ALL WOMEN BETWEEN THE AGES OF 15 AND 50, AND (B) MARRIED WOMEN AT THESE AGES, CANADA, AVERAGE OF 1930-2

City	Standardized Birth Rates per 1,000 Population		
	A On Basis of All Women between 15 and 50	B On Basis of Married Women between 15 and 50 ¹	C Excess of B over A
Calgary, Alta.....	16.4	16.5	0.1
Edmonton, Alta.....	17.8	18.2	0.4
Halifax, N.S.....	19.4	22.2	2.8
Hamilton, Ont.....	17.1	17.0	- 0.1
London, Ont.....	14.0	15.8	1.8
Montreal, Que.....	20.0	22.7	2.7
Ottawa, Ont.....	15.8	21.2	5.4
Quebec, Que.....	27.4	40.8	13.4
Regina, Sask.....	17.8	18.5	0.7
Saint John, N.B.....	19.6	22.8	3.2
Saskatoon, Sask.....	16.6	17.0	0.4
Toronto, Ont.....	14.5	16.9	2.4
Vancouver, B.C.....	12.9	13.7	0.8
Verdun, Que.....	19.7	18.2	- 1.5
Windsor, Ont.....	13.5	16.6	3.1
Winnipeg, Man.....	13.1	15.0	1.9

¹ The expected number of legitimate births, involved in the computation of the standardized birth rate in this column was multiplied by 1.036 in each case in order to make allowance for illegitimate births on the basis of the proportion in Canada as a whole.

TABLE 22—PERCENTAGE OF FEMALES MARRIED, IN THE SEVEN QUINQUENNIAL AGE GROUPS FROM 15 TO 50 YEARS, CANADA, 1931

Age Group	P. C. Females Married			
	Canada	Hamilton	Ottawa	Quebec
15 - 49.....	56.11	58.89	45.68	40.63
15 - 19.....	5.03	5.20	3.23	1.78
20 - 24.....	26.47	27.42	23.31	18.74
25 - 29.....	66.57	67.40	48.34	47.07
30 - 34.....	79.14	78.86	63.84	62.48
35 - 39.....	82.87	81.28	69.06	68.55
40 - 44.....	82.68	81.42	70.78	68.82
45 - 49.....	81.34	78.82	69.81	68.34

The Widowed.—Of the total male population of Canada, 2.64 p.c. were widowers in 1921 and 2.77 p.c. in 1931. Widows constituted a considerably larger part of the adult females, viz., 5.55 p.c. in 1921 and 5.77 p.c. in 1931. In the rural areas, 2.83 p.c. of the total male population were widowers in 1931, and in the urban areas 2.72 p.c.—a comparatively insignificant difference. There was, however, a very significant difference between the corresponding percentages for widows, since they constituted only 4.68 p.c. of the total rural population, as compared with 6.63 p.c. of the urban. Indeed, more widows lived in the urban communities with 30,000 people or more, which had an aggregate population of 3,024,855, than lived in the whole of the rural areas, where the population totalled 4,802,988.

The reasons for the considerable excess of urban over rural widows are many and varied. In the first place, thousands of widows must support themselves, and, like other female workers, find it easier to secure suitable occupation in urban communities. Again, some widows move to urban communities to obtain better educational opportunities for their children. Loneliness and hardship drive others from manless farms. Still others become inmates of "homes" which are usually found in urban communities. Here too are located both the apartment houses whose conveniences and services attract the widow of means, and the cheap and crowded tenements where thousands of the poorer ones are obliged to dwell. Both social and economic causes, therefore, combine to produce a concentration of widows in urban communities.

The Divorced.—The divorced in Canada are a relatively small section of the population, but of course their number, as shown in Census Reports, includes only those people who have been divorced prior to the census date and have not been re-married. In 1931 Canada had 7,441 divorced persons, 4,049 men or 0.11 p.c. of the total adult male population, and 3,392 women or 0.10 p.c. of the adult females. As might be expected, divorced persons tend to form a larger percentage of the urban than of the rural population: divorced men constituted 0.10 p.c. of the adult rural males, and divorced women 0.06 p.c. of the adult rural females, whereas the respective urban percentages were 0.12 and 0.13. The lower percentages among ruralites by no means prove that their moral standards are higher. It would appear that divorced persons or at least the divorced women, like widows, are drawn to urban centres because of both economic and social considerations.

Summary.—The main conclusions, developed from facts in this chapter, may be briefly recapitulated as follows:—

(1) Rural residents in Canada have in the past tended to marry earlier than urban residents, as the percentage married in the age groups between 15 and 24 years is higher among ruralites than among urbanites.

(2) The married comprise a larger percentage of the rural than of the urban adult females, but a smaller percentage of the rural than of the urban adult males. This situation is primarily the result of the unequal distribution of the sexes between rural and urban communities (the excess of males in the rural and of females in the urban), which is accentuated, amongst other factors, by the migration of young women in their 'teens and twenties to the urban centres to seek employment.

(3) The percentage of married to the total adult population, as ascertained at the Census of 1931, showed a substantial decline from the abnormal level of 1921 for each sex and for both rural and urban communities. This decline is most pronounced in the younger quinquennial

age groups, in fact in all groups under 30 years of age. In the older age groups the percentage of married to total adult population in some cases increased between 1921 and 1931, probably as a consequence of the high marriage rate of the War and of the post-War period before the 1921 Census.

(4) The lower percentage of married persons in the younger age groups in 1931 is one of the causes of a general decline of the birth rate in both rural and urban communities.

(5) Rural-urban comparisons of birth rates are rendered difficult by the large numbers of infants born to rural mothers in hospitals and classified as urban. However, a special report of the Dominion Bureau of Statistics on births by place of residence of mothers, indicates that the standardized birth rate, based on total females of child-bearing age in incorporated places of less than 5,000 population grouped with those in all rural areas, is higher than that for cities and towns over 5,000; the latter, classified into four additional groups by size of population, show decreasing standardized birth rates in each successive group as the population thereof increases; the first mentioned group (rural areas and incorporated places under 5,000) has the highest rate of all.

(6) A comparison of the foregoing standardized birth rate, based on total females, with other standardized rates based on married women, both from 15 to 50 years of age, reflects the fact that in Ottawa and particularly in the city of Quebec there is an unusually large proportion of unmarried women at these child-bearing ages.

(7) A concentration of widows and divorced women in urban communities is found to be the result of various conditions, both social and economic.

CHAPTER VII

RACIAL ORIGIN AND NATIVITY

Origin of the Total Population.—The first white inhabitants of the Dominion of Canada were French. In the beginning they were traders, handling the products of the Indian trappers, and consequently in the earliest days the population of the trading towns of Quebec and Montreal (Ville-Marie) was a relatively high proportion of the total. This condition continued until about the time of the first census of New France, taken in 1665-6, but both before and after, this census endeavours were made by the grant of seigneuries to put a larger part of the French population on the land. These attempts enjoyed a good measure of success and resulted in the extension of rural settlements both below Quebec and between Quebec and Montreal.

After the cession of Canada to the British in 1763, most of those French who had not "struck root" in the country went back to France and were replaced by English and Scottish immigrants who naturally settled in the two chief trading centres of the colony, Quebec and Montreal. Thus the English and Scottish in Canada, in the twenty years that elapsed between the cession of the country and the treaty which closed the War of the American Revolution in 1783, were mainly urban and the French Canadians mainly rural. The present province of Quebec received its first definite inflow of agriculturists of the English tongue with the coming of the United Empire Loyalists to the Eastern Townships and parts of the Ottawa Valley, as well as to the Gaspé seaboard; many others of the same group began the settlement of what is now Ontario and New Brunswick. The Empire Loyalists, therefore, established the first English-speaking rural communities of any importance within the borders of the Dominion. It may be added that these new settlers had in many cases resided in the leading urban communities of the thirteen colonies and were now driven from their former urban pursuits to rural hardships by the necessity of keeping themselves alive in a very sparsely peopled country under more severe climatic conditions.

In the first half of the nineteenth century additional waves of settlers arrived from England, Scotland and Ireland at a time when the rural population of the British Isles was still much larger than the urban. Because the possession of land gave a certain social distinction in these older countries, the average British immigrant to Canada, who was usually of the landless class, coveted and obtained the possession of land whereon he engaged in farming. Doubtless a considerable number of the newcomers had belonged to the landed gentry in the Old Country, but in due course they learned that in the new country Jack was as good as his master and prestige was not necessarily connected with the ownership of land. The more efficient servants were able sooner or later to obtain land of their own. After ten or twenty years on their own farms, these ex-servants, accustomed to hard work and a lower standard of living, were often more prosperous than their former masters. The masters themselves generally found it impossible to change their occupations, unless indeed they secured government positions of which there were not very many. Mainly for these reasons the immigrant went on the land and accordingly, up to 1850 at least, the total population of the few existing towns of Upper Canada, Nova Scotia and New Brunswick was a small fraction of that of the country as a whole. At the middle of the nineteenth century, therefore, both the older French settlers and the newer British inhabitants were predominantly rural, perhaps to the extent of 90 p.c. or even more. The people of German and Dutch extraction who had settled in certain parts of Nova Scotia and Upper Canada were also decidedly rural. There was, indeed, no strong urban element in the entire country.

Early in the second half of the nineteenth century signs of an increase in the small urban proportion were beginning to be seen. Almost all the fertile lands of Southern Ontario were occupied and, possibly, most of those in the Maritime Provinces as well. Consequently the newcomers, who were mainly British, could no longer secure free land; moreover, they were from countries that had become more highly industrialized since their predecessors had emigrated. Again, the growth of manufactures in Canada after 1850, and more particularly after 1858, created a demand for larger numbers of people in city and town industries. Accordingly, the urban populations of both Upper Canada and Lower Canada, especially in the larger centres, commenced to increase quite rapidly, the people of both French and British origin sharing in this development. By 1871, according to the First Census of the Dominion, there were cities of quite respectable size; those in Ontario, New Brunswick and Nova Scotia were peopled predominantly by citizens of British stock, and those in Quebec by the French together with a considerable English-speaking element.

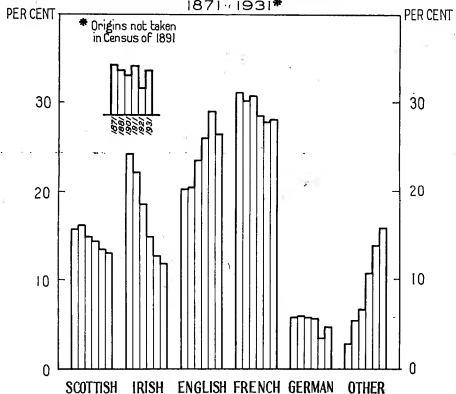
This distribution lasted, on the whole, until about the beginning of the twentieth century. As outlined in preceding chapters, the urban population of Canada had increased rapidly but mainly through the growth in numbers of the two great original races, which, in 1901, had between them 87.74 p.c. of the total. The long-established population of German and Dutch origin, which had amalgamated fairly well with the original settlers, raised this figure by 6.41 to 94.15 p.c.; an additional 2.38 p.c., representing Indians and Eskimos, increased the total to 96.53. Accordingly, all the other races combined had only 3.47 p.c. of the aggregate population of Canada and were therefore of comparatively minor significance in either rural or urban districts. Of this residual group no single race had as much as one-half of 1 p.c. of the total population. Thus the Canadian "melting pot", whether in rural areas or urban communities, is a creation of the twentieth century.

In the first three decades of this century the population in the residual group of origins, i.e., those not specifically mentioned in the preceding paragraph, increased by almost a million and a quarter souls. In 1901, out of a total population of 5,371,315 in the Dominion, those of British origin numbered 3,063,195, those of French origin 1,649,371, of Dutch 33,845 and of German 310,501, while there were 127,941 aboriginal Indians and Eskimos. These five groups together accounted for 5,184,853 of the total population, leaving only 186,462 of all other origins whatsoever. By 1931 the population of British origin had reached 5,381,071, French 2,927,990, Dutch and German 148,962 and 473,544 respectively, and aboriginal Indians and Eskimos 128,890, making a total of 9,060,457 out of an aggregate population of 10,376,786. The number of people of origins other than those named was, therefore, 1,316,329 in 1931 or seven times as many as in 1901, while the total population was not quite doubled during those thirty years. This great change within the space of a single generation has, of course, been due in the main to heavy immigration from continental Europe.

The leading origins of the people of Canada at the various censuses since Confederation, excepting at that of 1891 when origins were not taken, together with the percentages of each origin in the aggregate population, may be seen in Tables 23 and 24. Chart O shows at a glance the relatively small decrease since 1871 in the proportion of the population of Scottish, French and German origins, the great and continuous decrease of the Irish, the considerable but irregular increase of the English and the huge expansion in the proportion of other origins. The term "origins" in these and other census compilations indicates the "sources from which the Canadian population has been derived", the term having "a combined biological, cultural and geographical significance". Origin does not necessarily signify the place of nativity or country of birth, as dealt with at some length in a later section of this chapter, but it elicits rather the "stock", racial extraction or original place of family residence. For a fuller explanation of the 1931 situation as regards both nativity and origin, reference might be made to the Census Monograph of Professor W. B. Hurd on the "Racial Origins and Nativity of the Canadian People (A study based on the Census of 1931 and supplementary data)".

RACIAL ORIGIN OF THE POPULATION OF CANADA ①

PERCENTAGE OF CERTAIN ORIGINS TO TOTAL
AT SIX DECENNIAL CENSUSES
1871-1931*



See Table 24

TABLE 23—RACIAL ORIGIN OF THE POPULATION, NUMERICAL DISTRIBUTION, CANADA, CENSUSES OF 1871, 1881 AND 1901 TO 1931¹

Origin	1871 ²	1881	1901	1911 ³	1921	1931
British—						
English.....	706,369	881,301	1,260,899	1,871,268	2,545,358	2,741,410
Irish.....	846,414	957,403	955,721	1,074,738	1,107,820	1,230,808
Scottish.....	549,946	699,863	800,154	1,027,015	1,173,625	1,346,330
Other.....	7,773	9,947	13,421	26,060	41,952	62,494
Totals, British.....	2,110,502	2,548,514	3,063,195	3,999,081	4,868,738	5,381,071
French.....	1,082,940	1,298,020	1,649,371	2,061,719	2,452,743	2,927,990
Austrian, n.o.p. ⁴	-	-	10,947	44,036	107,671	48,639
Belgian.....	-	-	2,994	9,694	20,234	27,555
Belgian and Roumanian.....	-	-	354	5,883	15,235	32,216
Chinese.....	-	4,383	17,312	27,531	39,437	46,510
Czech (Bohemian and Moravian).....	-	-	-	-	8,840	30,401
Dutch.....	29,662	30,412	33,845	55,961	117,505	148,962
Finnish.....	-	-	2,502	15,500	21,494	43,885
German.....	202,991	254,319	310,501	403,417	294,635	473,544
Greek.....	-	-	291	3,614	5,740	9,444
Hebrew.....	125	667	16,131	76,199	126,196	156,726
Hungarian.....	-	-	1,549	11,648	13,181	40,682
Indian and Eskimo ⁵	23,037	108,547	127,941	105,611	113,724	128,890
Italian.....	1,035	1,849	10,334	45,963	66,769	98,173
Japanese.....	-	-	4,738	9,067	15,868	23,342
Negro.....	21,496	21,304	17,437	16,994	18,291	19,456
Polish.....	-	-	6,285	33,652	53,403	145,503
Russian.....	607	1,227	19,825	44,376	100,064	88,148
Scandinavian ⁶	1,623	5,223	31,042	112,682	167,359	228,049
Ukrainian.....	-	-	5,682	75,432	106,721	225,113
Yugoslavic.....	-	-	-	-	3,906	16,174
Various.....	4,183	8,540	7,090	31,381	28,796	27,476
Unspecified.....	7,561	40,806	31,539	18,932	21,249	8,898
Grand Totals.....	3,485,761	4,324,810	5,371,315	7,306,643	8,787,949	10,376,786

For footnotes see end of Table 458

Origin of the Rural and Urban Population.—In the first generation of the Dominion of Canada, when there were included in the population only a few racial elements of any importance, the British races—more particularly the English—were, broadly speaking, more urbanized than the general average of the population; the French, as well as the Dutch and German elements, were less urbanized than the average, while the aboriginal population was, of course, almost wholly rural.

From census to census, however, the tendency toward urbanization was increasing, as has been shown in preceding chapters of this study. The twentieth century has been characterized by a great increase in the number of people of those races which had not been previously represented in any large numbers in the Canadian population. Practically all these races, as also those already represented, have contributed in some degree to the modern urbanization movement. Nevertheless, the people of certain races on arriving in Canada have, from the beginning, sought the cities almost exclusively, while those of other races have entered with at least the original intention of making their homes in the vast areas opened up to cultivation in the Canadian West. On the one hand, newcomers of certain origins have tended to reinforce, much more than others, the urbanization trend; members of most of those races which have sought the cities were mainly town dwellers in their former habitat. On the other hand, the Scandinavians and the Slavs who have migrated to Canada (the former entering chiefly by way of the United States) have attempted, for the most part, to make their homes in rural communities and to carry on agriculture; the Slavs, indeed, have found that the prairies of Saskatchewan and Alberta closely resemble the "steppes" of Russia and that agricultural life in Canada is to this extent at any rate like that in their old home land.

The newer racial elements in Canada that have been proportionately most largely reinforced by immigration and have thus increased much more rapidly than the population as a whole, include the following: Austrian, Belgian, Bulgarian and Roumanian, Chinese, Finnish, Greek, Hebrew, Hungarian, Italian, Japanese, Polish, Russian, Scandinavian and Ukrainian.

Among these newer and growing racial groups, those showing the greatest urban tendencies, under the usual definition, are the Hebrew, Greek, Chinese, Italian and Syrian and Asiatics other than the Japanese. At the 1931 Census less than 1 Hebrew in 25, 1 Greek in 10, and 1 Italian and 1 Chinaman in 5 were rural residents.

TABLE 24—RACIAL ORIGIN OF THE POPULATION, PERCENTAGE DISTRIBUTION, CANADA, CENSUSES OF 1871, 1881 AND 1901 TO 1931¹

Origin	Percentages of Total Populations					
	1871 ²	1881	1901	1911 ³	1921	1931
British—						
English.....	20.20	20.38	23.47	25.97	28.06	26.42
Irish.....	24.28	22.14	18.41	14.91	12.61	11.88
Scottish.....	15.78	16.18	14.90	14.25	13.35	12.97
Other.....	0.22	0.23	0.25	0.36	0.48	0.60
Totals, British.....	60.55	58.93	57.03	55.49	55.40	51.86
French.....	31.07	30.03	30.71	28.61	27.91	28.22
Austrian, n.o.p. ⁴	—	—	0.20	0.61	1.53	0.47
Belgian.....	—	—	0.06	0.13	0.23	0.27
Bulgarian and Roumanian.....	—	—	0.01	0.08	0.17	0.31
Chinese.....	—	0.10	0.32	0.39	0.45	0.45
Czech (Bohemian and Moravian).....	—	—	—	—	0.10	0.29
Dutch.....	0.85	0.70	0.63	0.78	1.34	1.44
Finnish.....	—	—	0.05	0.22	0.24	0.42
German.....	5.82	5.88	5.78	5.60	3.35	4.56
Greek.....	—	—	0.01	0.05	0.07	0.09
Hebrew.....	—	0.02	0.30	1.06	1.44	1.51
Hungarian.....	—	—	0.03	0.16	0.15	0.39
Indian and Eskimo ⁵	0.66	2.51	2.38	1.47	1.29	1.24
Italian.....	0.03	0.04	0.20	0.64	0.76	0.95
Japanese.....	—	—	0.09	0.13	0.18	0.22
Negro.....	0.62	0.49	0.32	0.24	0.21	0.19
Polish.....	—	—	0.12	0.47	0.61	1.40
Russian.....	0.02	0.03	0.37	0.62	1.14	0.85
Scandinavian ⁶	0.05	0.12	0.58	1.36	1.90	2.20
Ukrainian.....	—	—	0.11	1.05	1.21	2.17
Yugoslavian.....	—	—	—	—	0.04	0.16
Various.....	0.12	0.20	0.13	0.44	0.33	0.26
Unspecified.....	0.22	0.94	0.59	0.23	0.24	0.09
Grand Totals.....	100.0	100.0	100.0	100.0	100.0	100.0

¹ Origins were not taken in the Census of 1891.² The figures for 1871 cover the four original provinces of Canada only.³ The 1911 Census figures are here adjusted by the allocation of the unspecified, as far as possible, to their respective origins, thereby reducing the number of unspecified from 147,345 (vide 1931 Census Vol. I, Ch. VIII, Table II, p. 236) to 16,932, of which 9,233 were rural and 7,679 were urban (vide the same Vol. I, Table 35, pp. 710-1); the absolute figures for all origins listed herein were increased to some extent by this adjustment.⁴ N.o.p. = Not otherwise provided for. It is probable that many Austrians stated their origin as German, Hungarian, Finnish, Polish, Czech, etc.⁵ Incomplete in 1871; includes "half-breeds" in 1901.⁶ Includes Danish, Icelandic, Norwegian and Swedish; in 1921 they numbered respectively 21,124, 15,876, 68,856 and 51,503; in 1931, 34,118, 19,382, 93,243 and 81,306.

At the same census, the peoples who were less urbanized than the general population included the Poles, Japanese, Finns, Belgians, Scandinavians, Ukrainians and Russians, and the Austrians, with whom were grouped chiefly the Hungarians, Czechs and Slovaks, Roumanians, Yugoslavians, Lithuanians and Bulgarians. The Scandinavians, though still much less urbanized than the average in the population as a whole, showed a distinct inclination for town and city life between 1921 and 1931, the urban percentage having risen from 25.30 to 32.30; the Ukrainians have had the same tendency. In 1921, amongst other races which had a somewhat smaller percentage of urban residents than in 1911 were the Polish, German, Belgian, Scandinavian, Finnish, the Austrian group, and Indian and Eskimo. In 1931 also, the Belgians were slightly less urbanized than in 1911. The reason for these declines, and for the smaller contribution to the urbanization movement on the part of a few of the newer immigrant races who began their residence in Canada in rural districts, may be that the process of Canadianization among such races has not yet proceeded sufficiently far to enable them or their descendants to feel at home in Canadian urban centres.

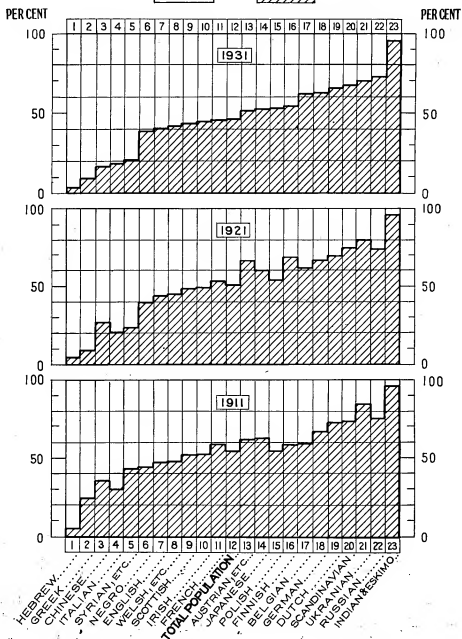
The percentages of residents of provincially incorporated urban places among the population of these and most other important racial origins in Canada at the Censuses of 1911, 1921 and 1931 are submitted in Table 25, the origins being arranged in descending order according to their urban preponderance in 1931. In the same order in Chart P are presented these urban percentages for the three years, as well as the corresponding rural figures.

RACIAL ORIGIN OF THE POPULATION OF CANADA

(P)

**PERCENTAGE URBAN AND RURAL
1911, 1921, 1931**

URBAN   RURAL



See Table 25

TABLE 25—RACIAL ORIGIN OF THE POPULATION, PERCENTAGE URBAN, CANADA, CENSUSES OF 1911, 1921 AND 1931

Origin	P.C. Urban			Origin	P.C. Urban		
	1931	1921	1911		1931	1921	1911
Hebrew.....	96-45	95-72	94-01	Austrian, etc. ¹	47-77	33-50	38-01
Greek.....	90-33	90-21	75-51	Japanese.....	46-98	39-83	37-08
Chinese.....	82-79	72-51	63-37	Polish.....	46-57	45-35	45-86
Italian.....	81-55	79-28	69-84	Finnish.....	45-80	30-97	41-12
Syrian, etc. ¹	79-40	76-83	56-41	Belgian.....	37-08	38-57	40-80
Negro.....	60-82	60-40	55-97	German.....	36-94	33-23	33-49
English.....	59-30	55-88	53-69	Dutch.....	33-05	30-81	26-88
Welsh, etc. ²	57-76	55-03	52-19	Scandinavian.....	32-30	25-30	26-31
Scottish.....	56-59	51-55	47-53	Ukrainian.....	29-53	19-85	15-00
Irish.....	54-65	50-81	47-23	Russian.....	27-34	25-84	23-96
French.....	53-96	47-72	40-94	Indian and Eskimo.....	3-02	3-66	3-71
TOTAL POPULATION.....	53-70	49-52	45-42				

¹ Includes Syrian, Hindu and a few other Asiatic races (except Chinese and Japanese).

² Includes Welsh and all other British except English, Scottish and Irish.

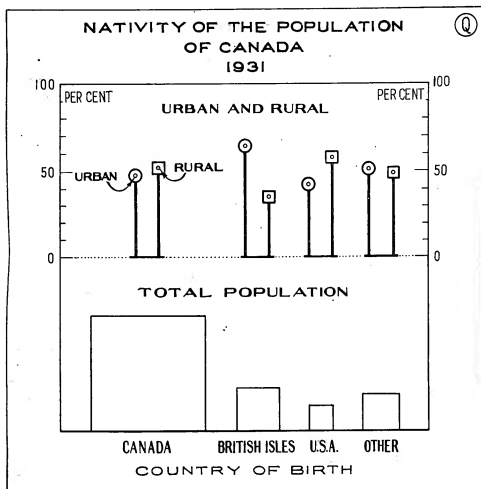
³ Includes Austrian, Hungarian, Czech and Slovak, Roumanian, Yugoslavic, Lithuanian, Bulgarian and some smaller European races.

Nativity of the Rural and Urban Population*.—The rural-urban composition of the native Canadian population is almost the same as that of our foreign born; the percentages in both cases swing slightly in favour of the ruralites, while those born in British lands, other than our Dominion, are for the most part urbanites in Canada. In 1931, 64.84 p.c. of our population whose birthplace was the British Isles were living in cities and towns of 1,000 persons or more, those hailing from England having been only 63.62 p.c. urban while those from Ireland and Scotland were respectively 66.68 p.c. and 68.13 p.c. These urban places contained no less than 75.60 p.c. of our people who claimed as their country of birth other British possessions except Canada.

The Canadian born, comprising nearly 78 in every 100 persons in this country, were 52.18 p.c. rural in 1931, while the foreign born were 52.73 p.c. These foreign ruralites, chiefly Europeans, numbered 591,961 as compared with our 400,449 ruralites born in the United Kingdom. However, for every 100 of our urbanites of foreign birth, totalling 530,734, there were more than 134 who claimed as their birthplace the British Isles, totalling 738,493; of the latter, 460,488 were from England, 71,708 from Ireland and 190,602 from Scotland.

Our rural and urban population born in the British Isles totalled 1,138,942 and exceeded by only 16,247 our 1,122,695 of foreign birth; each of them comprised nearly 11 in every 100 persons in Canada, the foreigners being composed almost entirely of the 714,462 from European countries, 60,608 from Asiatic countries and 344,574 from the United States. In Section A of Table 26 will be found the 1931 Census totals of the population of the Dominion and the rural and urban distribution thereof in both absolute and relative terms, according to broad nativity classifications, including especially those born in Canada and other parts of the British Empire and the total of foreign birth; some of these data are pictured in Chart Q. Section B of Table 26 is a list of foreign countries, whose native born as shown at this census had contributed more to Canada's rural than to her urban population, arranged in descending order according to this rural preponderance. Section C gives, in the order of urban preponderance, a corresponding list of countries whose native born had added more to our urban than to our rural numbers as indicated at this Seventh Decennial Census.

* In this section on nativity, all comparisons between rural and urban population are based on the dividing line of 1,000, all urban places with fewer than that number of persons being included with rural.



See Table 26

TABLE 26.—NATIVITY OF THE POPULATION, NUMBER AND PERCENTAGE URBAN AND RURAL FROM EACH COUNTRY OF BIRTH, CANADA, 1931

Country of Birth	Total	Urban ¹	Rural ¹	P.C. Urban	P.C. Rural
A—SUMMARY OF CANADIAN BORN, OTHER BRITISH, AND TOTAL FOREIGN BORN					
Total Population.....	10,376,786	5,102,641	5,214,145	49.75	50.25
Canada.....	8,060,261	3,858,897	4,210,364	47.82	52.18
Foreign Countries.....	1,122,695	530,734	591,961	47.27	52.73
British Isles.....	1,138,942	738,403	400,440	64.84	35.16
England.....	723,864	400,488	263,376	63.62	36.38
Ireland.....	107,544	71,708	35,836	66.68	33.32
Scotland.....	279,765	190,602	89,163	68.13	31.87
Wales and Lesser Isles.....	27,729	15,065	12,674	54.35	45.65
Other British Possessions.....	45,157	34,140	11,017	75.69	24.40
At Sea.....	731	377	354	51.57	48.43

B—FOREIGN BORN WITH RURAL PREPONDERANCE (DESCENDING ORDER)

Total.....	930,173	401,287	528,886	43.14	56.86
Norway.....	32,079	8,434	24,245	25.81	74.19
Sweden.....	34,415	10,025	24,390	29.13	70.87
Belgium.....	17,033	6,203	10,830	36.42	63.58
Holland.....	10,739	3,950	6,789	36.79	63.21
Denmark.....	17,217	6,374	10,843	37.02	62.98
Iceland.....	5,731	2,144	3,587	37.41	62.59
Germany.....	39,163	15,038	24,125	38.40	61.60
Austria.....	37,301	15,647	21,744	41.85	58.15
United States.....	344,574	144,676	199,898	41.99	58.01
Japan.....	12,201	5,520	6,741	45.02	54.98
Switzerland.....	6,076	2,857	3,219	47.02	52.98
Russia and Ukraine.....	128,165	60,815	67,350	47.45	52.55
Roumania.....	40,322	19,605	20,717	48.02	51.98
Poland.....	171,169	83,583	87,586	48.83	51.17
Finland.....	30,354	14,986	15,368	49.37	50.63
Other European Countries.....	2,887	1,430	1,457	49.58	50.42

C—FOREIGN BORN WITH URBAN PREPONDERANCE (DESCENDING ORDER)

Total.....	192,522	129,447	63,075	67.24	32.76
Greece.....	5,570	5,094	485	91.31	8.69
Turkey.....	921	767	154	83.28	16.72
Syria.....	3,953	3,198	755	80.90	19.10
Italy.....	42,578	33,483	9,095	78.64	21.36
China.....	42,037	31,762	10,275	75.56	24.44
Lithuania.....	5,704	4,237	1,467	74.28	25.72
Other Asiatic Countries.....	803	583	220	72.60	27.40
Spain.....	572	412	160	72.03	27.97
Other Countries.....	1,755	1,239	516	70.60	29.40
Armenia.....	633	443	190	69.98	30.02
Bulgaria.....	1,467	980	481	67.21	32.79
Yugoslavia.....	17,110	10,230	6,880	59.79	40.21
Czechoslovakia.....	22,835	12,761	10,074	55.88	44.12
South America.....	1,296	692	604	53.40	46.60
Hungary.....	28,523	14,946	13,577	52.40	47.60
France.....	16,756	8,614	8,142	51.41	48.59

¹ Urban includes only places of 1,000 people and over; all others are classified as rural.

A comparison of the totals of the last two sections in Table 26 shows that in 1931 natives of the foreign countries contributing more to our rural than to our urban population totalled 930,173, which is 82.85 p.c. of all our foreign born, whereas those from countries contributing more to urban than to rural numbered only 192,522, which is 17.15 p.c. This would suggest that those countries which supply the numerically important contributions to our immigrant population should be found in Section B of the table, while countries making small contributions should be found in Section C. That this is true, with a few exceptions, is discovered by even a casual glance at the totals of these sections and it is, of course, what one would expect in view of the nature and importance of colonization policies in Canada's economic development.

Large numbers of immigrants have entered this country under the influence of colonizing organizations, and, apart from those brought in to build our great railway systems, they were sought in the main to cultivate the land. Generally speaking then, they did not immigrate unsolicited—a colonist's occupation and his final destination in this country were picked for him before he left his native soil. The great virgin prairies of the West were widely advertised in foreign lands by Canadians interested in colonization work. "Fill the West with people who will go on the land and grow wheat" was the slogan of the colonizers. This colonizing policy was continued, more or less intensively, from its inception at the turn of the century until the year 1930; in fact, during the last decade of this period, immigration from Europe was restricted principally to those countries whose inhabitants were known to be good farm settlers—people who, it was believed, would stay on the land. Other factors involving assimilability were very important in connection with this restriction, but the fact remains that few limitations really existed for any people (other than Asiatics) coming here to farm. Farmers were freely admitted on permits. At the beginning of this decade, alarm was expressed because trails were being beaten from the farms to the cities by the sons and daughters of early settlers. Therefore, males from countries known to be poor suppliers of rural workers were allowed into Canada only as farmers, or as labourers for farmers who definitely applied for them. Females were also permitted to enter as domestic servants.

This importation of farmers, mainly wheat growers, continued for three decades—farmers increased, acreage increased, production increased, until finally we produced a half billion bushel wheat crop and boastfully prophesied that this was only a beginning, that production would soar to a billion, even to two billion bushels and still higher. Nearly all of this wheat was to be exported. The Europe of War days had greatly curtailed production and prices had gone sky-high, but Europe after the War started growing wheat again and prices began to fall. Still farmers sought Canada or Canada sought farmers and acreage increased. To keep prices up, organizations were formed to regulate the flow of wheat to market and subsequently to hold it in elevators over long periods pending better price conditions. Europe reached its pre-War level of production in 1925. By 1927, production in relation to effective demand was so high that the farmer was living in a fool's paradise; rumblings were heard; plenty of notice was given; but credits were forthcoming and before the crash the business floated along for another two years on a raft of borrowed money.

In addition to this intense effort at attracting newcomers to grow wheat, a goodly number of immigrants were brought here for other purposes. Of the countries supplying a preponderance of urbanites to our foreign-born population (Table 26—C), the largest contributor at the Census of 1931 was Italy; in that year our Italian-born population totalled 42,578 of whom 31,762 or 78.64 p.c. were resident in urban places of 1,000 or more. Tables 27 and 28 give, by country of birth, various rankings and other comparisons of the population of Montreal, Toronto, Winnipeg and Vancouver in 1911, 1921 and 1931. In these four largest cities of Canada in 1931 were more than a third of the foregoing total of Italian born or nearly a half of their number resident in all urban places. Italians were originally brought into this country to work as railway labourers. The young men came over alone and proved to be fine railway builders. They saved their money and later sent home for their women. When the railway work was finished, a very large percentage of them drifted into the cities and settled around their parish churches, forming the "Little Italys" that are found in most of the bigger cities of Canada. As they knew much about grapes and other fruit from their environment and training in Italy, it was quite natural for them to become retail fruit marketers and pedlars—hence the many Italian fruit stores on street corners in our cities. The yearly additions to our Italian population are chiefly friends and relatives of those already here. The Italian at home is told, in correspondence with his friend in Canada, of the better economic conditions prevailing here, and one day, after scraping together enough money for the journey, the man from Italy arrives at the home of his friend in

this country. Canada thereby wins a new fruit handler or another railway section hand—but seldom a farmer. Although during the last decade government permits for entry of farm labourers were issued, as we have seen, only to individuals specifically named by farmers in this country as being required by them, yet comparatively few Italians with such permits remained on farms for more than short periods after arrival. For the most part they used Canada merely as a back door into the United States. Chicago was their objective and most of them made their objective. Others returned to Italy when they had "made their pile".

Of countries that have a larger percentage of their native born in our urban than our rural communities, China is, in point of numbers, next to Italy; in 1931, 42,037 of our foreign born population were Chinamen and 31,762 of these or 75.56 p.c. were urban. More than a third of the urban Chinese, or 11,533, were in Vancouver where they exceeded the number of persons giving their country of birth as either the United States or Ireland and where there was one of these natives of China for every seven British residents born outside of Canada. Chinese were originally brought into British Columbia to supply cheap labour in the lumber business. A certain percentage of them drifted eastward over Canada, and with practically no capital gained a very substantial interest in the ownership and operation of the restaurant and laundry businesses from coast to coast. Nevertheless, 17,771 or 56 p.c. of the Chinese in Canadian urban communities were in British Columbia in 1931 and only 5,967 and 2,444 in Ontario and Quebec respectively. Most Chinese are transients in this country and their numbers are closely controlled by legislation. Being Asiatics, they of course do not assimilate; moreover, legislation restricting their entry into the Dominion was enacted before a great number of them had arrived and it is doubtful whether many will ever be found here outside of British Columbia. In that province they compete very successfully in the fishing, market gardening and lumber trades. They are, to repeat, an urban people in this country, and the 24.44 p.c. designated as rural likely reside in unincorporated suburbs of the cities.

The next greatest contributors to our foreign-born urban population are Hungary with a rural and urban total of 28,523 and a percentage urban of 52.40, Czechoslovakia with 22,835 and 55.88 p.c. urban, and Yugoslavia with 17,110 and 59.79 p.c. urban. A considerable proportion of these people arrived since the end of 1925; for instance, of the 17,110 Yugoslavian born, residing in Canada in 1931, 12,062 or 70.50 p.c. arrived between January 1, 1926 and the census date, June 1, 1931. The urban percentages for the three countries are not very high and it is probable that they would appear in Section B of the table if it were not for the fact that farming was then beginning to be less attractive than formerly. The years 1926 to 1931 were, on the one hand, unpropitious for commencing farming operations—markets were disappearing and prices falling—while, on the other hand, great industrial expansion was attracting labour in the urban localities.

The Greeks are the most urban of our foreign born, 91.31 p.c. being urbanites, but their total at 5,579 is comparatively small. It is even probable that most of the balance of them are more suburban than rural. One of the countries whose contribution to our population is almost evenly divided between rural and urban localities is France with 16,756, approximately one-third of whom are in the province of Quebec.

The most rural of our foreign-born population (Table 26—B) are the Norwegians and Swedes, their percentages of ruralites in 1931 having been respectively 74.19 and 70.87. The numbers of our population of United States birth surpassed in both rural and urban districts those of any other foreign country; they had a total of 344,574 persons, of whom 199,898 or 58.01 p.c. were ruralites.

Next to the United States, the countries which contributed most to both our rural and urban foreign-born population in 1931 were Poland and Russia (including Ukraine). Natives of Poland accounted for 87,586 of our rural and 83,583 of our urban people; of these urbanites,

20,596 were in Toronto and 16,164 in Winnipeg. In the latter city's distribution of population by country of birth, Poland ranked immediately after Canada and England, thereby edging Scotland out of third position which she had held in 1921 and 1911; Russia and Ukraine stood fifth. Winnipeg and Toronto each had over 10,000 of Russian and Ukrainian birth and Montreal over 16,000; their total in Canadian cities and towns of 1,000 and over was 60,815, while those in smaller places and rural areas amounted to 67,350.

The Japanese in Canada are more rural than urban; in 1931 the figures were respectively 6,741 and 5,520, the ruralites being in the majority by about 10 p.c. of the total. This rural preponderance is probably accounted for by the Japanese predilection for market gardening, which they pursue successfully, especially in British Columbia. Because they are not farmers or agriculturists in the same sense as the wheat farmer and because their market gardens are situated on the outskirts of urban localities with which they deal directly, most of the Japanese designated as rural in the table might more correctly be described as suburban. Nearly three-quarters of our urban population born in Japan live within the limits of Vancouver, while it is surprising how few of them are to be found in some of the other large cities; Montreal had at the last census only 19, Winnipeg 21 and Toronto 114.

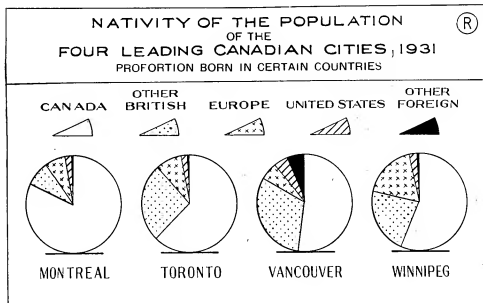
The total population of Canada in 1931 was very slightly more rural than urban, 50.25 p.c. being in rural communities and in urban places under 1,000, as indicated in Section A of Table 26; if entered in the list of leading foreign countries, our "Total Population" would stand last in the rural Section B just under Finland (50.63 p.c.), the country with the next lowest rural proportion having been France (48.59 p.c.) in the urban Section C. The Canadian born, as we have seen, are also more rural than urban, and if the Dominion were placed in rank with the foreign countries, its rural percentage would be found just above Roumania (51.38) and below Russia and Ukraine (52.55). Our people from England, Ireland and Scotland, as indicated in the first paragraph on nativity, are on the average decidedly urban and the percentage for all the British Isles together, if inserted in the foreign classification, would be in Section C of the table between Bulgaria and Yugoslavia. Britishers who come to Canada from other parts of the Empire are more urban than the Chinese.

The Canadian-born population in our biggest cities, as well as in the Dominion as a whole, outnumbers the total of our population born in all other British and in foreign countries combined. It is not generally realized that in 1931 the Canadian born comprised 81.99 p.c. of the entire population of Montreal, while their proportion in Toronto was only 62.26 p.c., in Winnipeg 56.51 p.c. and Vancouver 52.07 p.c. In both Montreal and Toronto the increase in these percentages between the Census of 1911 and that of 1931 has been only fractional, but in the two newer western cities it has been very substantial, the figure for Winnipeg having jumped from 44.08 p.c. in 1911 and for Vancouver from 43.80 p.c. In the two decades after 1911, the proportion of British born, other than Canadian, decreased in Montreal from 9.28 p.c. to 7.36 p.c.; the European born, excluding those from the United Kingdom, increased from 6.70 p.c. to 8.10 p.c. In Toronto during the same period, the British from abroad fell from 29.49 p.c. to 26.23 p.c. but the European rose from 5.15 p.c. to 8.64 p.c. Winnipeg's British born, as just defined, slumped from 31.69 p.c. in 1911 to 22.07 p.c. in 1931, while the corresponding decline in Vancouver was only from 33.88 p.c. to 31.02 p.c. Natives of Asia living in Vancouver at the 1931 Census exceeded those of Europe and of the United States, whereas in the other three cities the numbers of these Asiatics were inconsiderable. Winnipeg's European born at nearly 40,000 in 1931 were over two and one-half times those of Vancouver, and 1 in every 5 of the former's population was of foreign birth while in Toronto and Montreal the ratio was only 1 in 10.

Next to Canada in the nativity lists of these four cities in 1931 stands England, but as regards the third and subsequent position there is little similarity between these cities. The daughters and sons of Scotland are third in Toronto and Vancouver, fourth in Winnipeg and fifth in Montreal. The Irish born are fourth in Toronto, sixth in Vancouver, seventh in Winnipeg

and eighth in Montreal. The third place in Winnipeg was taken by Poland which was fifth in Toronto and sixth in Montreal. The United States came third in Montreal followed by Russia and Ukraine which held fifth place in Winnipeg and seventh in Toronto.

Further comparisons for these four most populous cities of Canada, similar to those in preceding paragraphs, are presented in the accompanying Tables 27 and 28 and rankings for numerous smaller cities and towns could be made from Volume II of the Census Reports of 1911 (Table 16), 1921 (Table 54) and 1931 (Table 47). The proportion of the population of Montreal, Toronto, Vancouver and Winnipeg, born in Canada, other British Countries, Europe, United States and all other foreign countries are compared by sectors of circles in Chart R.



See Table 27

Summary.—(1) New France having been primarily a trading colony, its population was in a sense chiefly urban. However, the French Canadians, through the granting of seigneuries, gradually went on the land and at the time of the British conquest were mainly rural.

(2) The first important English-speaking rural communities were established by the United Empire Loyalists, while the early nineteenth century saw considerable migration from the British Isles to Eastern Canada, where land was fertile and plentiful. Both French and British inhabitants, as well as those of German and Dutch descent, were decidedly rural at the middle of the century.

(3) Urbanization of Canada commenced on a large scale in the second half of the nineteenth century. Most of the free, fertile and easily accessible lands in Eastern Canada had been acquired by that time and urban distributing centres were growing up to serve the agricultural communities; moreover, Canadian manufacturing industries were progressing quite rapidly, and immigrants from the British Isles were showing a preference for town life. The British were more urban than the average for the country as a whole, while the French, German and Dutch stocks were slightly more rural than the average.

(4) Before the twentieth century there was no serious problem of Canadianization of the foreign "strangers within our gates"—there was then no so-called "melting pot". The British

TABLE 27—NATIVITY OF THE POPULATION OF THE FOUR LEADING CANADIAN CITIES, NUMERICAL DISTRIBUTION BY INDIVIDUAL COUNTRIES, AND NUMERICAL AND PERCENTAGE DISTRIBUTION BY GROUPS OF COUNTRIES, CENSUSES OF 1911, 1921 AND 1931

No.	Birthplace	Montreal		
		1911	1921	1931
A—INDIVIDUAL COUNTRIES—NUMERICAL DISTRIBUTION				
1	Canada.....	383,627	502,924	671,176
2	England.....	25,348	32,851	33,698
3	Ireland.....	6,931	6,314	6,940
4	Scotland.....	8,152	11,791	14,753
5	Wales.....	235	230	540
6	Lesser British Isles.....	77	1156	171
7	British Possessions.....	2,884	3,451	4,135
8	United States.....	9,498	15,721	17,531
9	Austria.....	2,654	2,806	2,190
10	Belgium.....	852	1,590	1,929
11	Bohemia.....	17	"	"
12	Bukovina.....	87	"	"
13	Bulgaria and Roumania.....	3,405	4,793	5,829
14	Czechoslovakia.....	"	43	3,682
15	Denmark.....	139	128	615
16	Finland.....	23	18	1,449
17	France.....	2,909	3,563	3,383
18	Galicia.....	381	508	"
19	Germany.....	1,213	508	1,777
20	Greece.....	452	893	984
21	Holland.....	104	217	288
22	Hungary.....	143	161	3,342
23	Iceland.....	1	11	4
24	Italy.....	4,754	6,755	8,391
25	Yugoslavia.....	"	37	654
26	Lithuania.....	"	"	1,907
27	Norway.....	149	129	343
28	Poland.....	"	2,343	11,504
29	Russia and Ukraine.....	13,634	16,642	16,371
30	Spain.....	19	10	136
31	Sweden.....	241	208	419
32	Switzerland.....	10	323	744
33	China.....	1,160	1,579	1,744
34	Japan.....	18	17	19
35	Syria.....	430	791	842
36	Other European Countries.....	362	698	375
37	Other Asiatic Countries.....	315	161	278
38	All Other Countries ¹	288	450	464

B—SUMMARY—GROUPS OF COUNTRIES—NUMERICAL DISTRIBUTION

1	Total Population.....	470,480	618,506	818,577
2	Canada.....	383,627	502,924	671,176
3	All Other British Countries ²	43,665	54,807	60,226
4	Total British Countries.....	427,292	557,731	731,402
5	United States.....	9,498	15,721	17,531
6	Europe.....	31,517	42,080	66,316
7	Asia.....	1,023	2,548	2,883
8	All Other Foreign Countries.....	250	425	445
9	Total Foreign Countries.....	43,188	60,775	87,176

C—SUMMARY—GROUPS OF COUNTRIES—PERCENTAGE DISTRIBUTION

1	Total Population.....	100.00	100.00	100.00
2	Canada.....	81.54	81.31	81.99
3	All Other British Countries ²	9.28	8.86	7.36
4	Total British Countries.....	90.82	90.17	89.35
5	United States.....	2.02	2.54	2.14
6	Europe.....	6.70	6.81	8.10
7	Asia.....	0.41	0.41	0.35
8	All Other Foreign Countries.....	0.05	0.07	0.00
9	Total Foreign Countries.....	9.18	9.83	10.65

¹ Includes those born in British Isles who did not specify particular country.² Includes 798 in Montreal, 914 in Toronto, 1,006 in Vancouver and 2,541 in Winnipeg, whose birthplace was stated as "British Unknown"; probably most of them were born in the British Isles.³ Bohemia is included with the new Republic of Czechoslovakia.⁴ Bukovina is included with Roumania.⁵ The new Republic of Czechoslovakia, comprising Bohemia and certain other parts of the former Austria-Hungary, did not come into existence until October, 1918.

TABLE 27—NATIVITY OF THE POPULATION OF THE FOUR LEADING CANADIAN CITIES, NUMERICAL DISTRIBUTION BY INDIVIDUAL COUNTRIES, AND NUMERICAL AND PERCENTAGE DISTRIBUTION BY GROUPS OF COUNTRIES, CENSUSES OF 1911, 1921 AND 1931—Con.

Toronto			Vancouver			Winnipeg			No.
1911	1921	1931	1911	1921	1931	1911	1921	1931	
232,366	324,768	392,095	43,978	57,260	128,396	59,967	93,854	123,634	1
70,297	95,484	94,584	17,754	22,043	44,001	23,747	28,546	26,161	2
15,996	17,787	22,310	2,625	3,051	5,573	4,655	5,784	5,741	3
19,990	29,402	40,132	9,650	10,730	21,613	10,949	14,580	14,719	4
767	1,166	2,141	496	741	1,577	513	814	849	5
252	568	694	194	1294	483	135	246	174	6
3,961	4,728	5,660	3,305	1,828	3,116	3,075	676	610	7
11,559	14,938	14,758	10,401	7,649	10,870	5,798	7,052	5,902	8
1,632	1,684	1,936	411	148	487	8,831	3,220	2,080	9
33	100	211	132	131	258	155	182	237	10
13	"	"	17	"	"	95	"	"	11
10	"	"	6	"	"	67	"	"	12
762	1,296	2,035	49	60	285	705	1,182	1,902	13
"	40	1,429	"	36	154	"	"	308	14
67	119	539	180	109	715	163	240	554	15
515	305	2,986	181	209	1,333	31	36	179	16
332	488	455	266	272	441	323	336	260	17
250	861	"	12	53	"	580	3,121	"	18
1,290	492	1,490	733	190	893	1,866	661	1,241	19
480	504	1,736	226	222	293	56	91	73	20
185	294	438	85	105	440	282	286	377	21
193	35	1,256	64	22	177	323	348	792	22
4	15	8	78	59	125	1,640	1,208	1,209	23
3,096	3,902	5,278	1,922	799	1,478	517	689	685	24
"	48	1,370	"	81	676	"	47	468	25
"	"	704	"	"	63	"	"	282	26
103	129	206	575	457	1,723	432	344	693	27
"	7,244	20,596	"	206	1,036	"	2,776	10,164	28
10,035	11,469	10,805	606	579	1,554	8,577	10,203	10,011	29
10	18	68	10	35	10	10	10	16	30
212	187	324	952	661	2,136	1,403	1,056	1,433	31
10	194	336	10	66	247	10	95	169	32
1,061	2,035	2,571	3,364	5,815	11,533	574	788	971	33
26	42	114	1,841	2,981	4,133	10	30	21	34
101	191	171	40	53	68	90	69	83	35
298	596	275	115	49	108	85	99	159	36
626	107	253	27	28	62	83	38	61	37
430	282	273	156	141	221	128	99	102	38
376,638	521,893	631,207	100,401	117,217	246,593	136,035	179,087	218,785	1
232,366	324,768	392,095	43,978	57,260	128,396	59,967	93,854	123,634	2
111,041	149,184	165,565	34,013	38,712	76,495	43,109	50,671	48,288	3
343,407	473,952	558,560	77,991	95,972	204,891	103,076	144,525	171,922	4
11,559	14,938	14,758	10,401	7,649	10,870	5,798	7,052	5,902	5
19,400	30,395	54,561	8,900	4,805	14,857	26,311	26,517	39,757	6
1,814	2,375	3,109	6,272	8,877	15,796	757	919	1,136	7
358	233	229	137	116	179	93	74	68	8
33,131	47,941	72,647	22,410	21,245	41,702	32,959	34,562	46,863	9
100-00	100-00	100-00	100-00	100-00	100-00	100-00	100-00	100-00	1
61-71	62-23	62-26	43-80	48-85	52-07	44-08	52-41	56-51	2
29-49	28-59	26-23	33-88	33-02	31-02	31-69	28-29	22-07	3
91-20	90-82	88-49	77-68	81-87	83-09	75-77	80-70	78-58	4
3-07	2-82	2-34	10-36	6-53	4-41	4-20	3-94	2-70	5
5-15	5-82	5-04	6-57	3-03	6-02	19-34	14-81	18-17	6
0-48	0-40	0-40	5-25	7-57	6-41	0-56	0-51	0-62	7
0-10	0-04	0-04	0-14	0-10	0-07	0-07	0-04	0-03	8
8-80	9-18	11-51	22-32	19-13	16-01	24-23	19-30	21-42	9

* Galicia is included with Poland in 1931.

* Yugoslavia, comprising Serbia, Montenegro, part of Bulgaria, and various provinces of the former Austria-Hungary, was not completed as a separate state until 1918.

* Lithuania during these years was not classified separately from Russia and Germany.

* Poland at this time was divided among Germany, Austria-Hungary and Russia.

* Figures, if any, are included with those for "Other European Countries".

* Includes a very few people born at sea.

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TABLE 28—NATIVITY OF THE POPULATION OF THE FOUR LEADING CITIES OF CANADA, NUMERICAL RANKINGS OF COUNTRIES OF BIRTH ACCORDING TO SIZE OF POPULATION FROM EACH AS INDICATED IN TABLE 27, CENSUSES OF 1911, 1921 AND 1931.

Birthplace	Numerical Rankings											
	Montreal			Toronto			Vancouver			Winnipeg		
	1911	1921	1931	1911	1921	1931	1911	1921	1931	1911	1921	1931
Total Number of Rankings.....	32	34	35	32	34	35	32	34	35	32	34	35
Canada.....	1	1	1	1	1	1	1	1	1	1	1	1
England.....	2	2	2	2	2	2	2	2	2	2	2	2
Ireland.....	6	7	8	4	4	4	7	6	6	7	6	7
Scotland.....	5	5	5	3	3	3	4	3	3	3	3	4
Wales.....	22	22	25	12	13	12	14	10	11	17	13	14
Lesser British Isles.....	28	27	32	20	17	21	18	14	20	23	24	27
British Possessions.....	10	10	10	7	8	9	6	8	8	16	20	20
United States.....	4	4	3	5	5	6	3	4	5	6	5	6
Austria.....	11	11	14	9	11	14	15	21	19	4	7	8
Belgium.....	14	13	15	28	26	30	22	23	25	22	25	25
Bohemia.....	31	-	-	30	-	-	30	-	-	25	-	-
Bukovina.....	27	-	-	31	-	-	32	-	-	29	-	-
Bulgaria and Roumania.....	8	8	9	13	12	13	27	27	24	12	11	9
Czechoslovakia.....	-	30	11	-	33	16	-	32	29	-	21	19
Denmark.....	25	29	24	27	28	22	20	19	17	21	23	18
Finland.....	29	32	19	15	18	10	19	17	13	31	32	26
France.....	9	9	12	18	20	23	16	15	21	19	20	24
Galicia.....	17	18 E	-	21	14	-	31	29 E	-	13	8	-
Germany.....	12	18 E	17	10	19	17	11	20	16	9	17	11
Greece.....	15	15	20	16	16	15	17	16	23	30	29	32
Holland.....	26	23	30	24	21	24	24	24	22	20	22	22
Hungary.....	24	25 E	13	23	30	19	26	34	28	15	18	15
Iceland.....	33	34	35	32	34	35	25	28	30	10	10	12
Italy.....	7	6	7	8	9	9	8	9	14	16	15	17
Yugoslavia.....	-	31	23	-	31	19	-	25	19	-	31	21
Lithuania.....	-	-	16	-	-	29	-	33	-	-	-	23
Norway.....	23	28	29	25	27	31	13	13	10	18	19	16
Poland.....	-	12	6	-	7	5	-	18	15	-	9	3
Russia and Ukraine.....	3	3	4	6	6	7	12	12	12	5	4	5
Spain.....	-	-	33	-	-	34	-	-	35	-	-	35
Sweden.....	21	24	27	22	25	26	10	11	9	11	12	10
Switzerland.....	-	21	22	-	23	25	-	26	26	-	28	28
China.....	13	14	18	11	10	11	5	5	4	14	14	13
Japan.....	30	33	34	29	32	33	9	7	7	32	24	34
Syria.....	16	16	21	26	24	32	28	20 E	32	26	30	31
Other European Countries.....	18	17	28	19	15	27	23	31	31	27	26 E	29
Other Asiatic Countries.....	19	25 E	31	14	29	29	29	33	34	28	33	33
All Other Countries.....	20	20	26	17	22	28	21	22	27	24	20 E	30

For footnotes applicable to the blank spaces see Table 27.

E denotes equality of population and ranking of two countries.

and French stocks formed 87.74 p.c. of the aggregate population in 1901 and the Germans, Dutch, and aboriginal Indians and Eskimos another 8.79 p.c., leaving only 3.47 p.c. in the residual group of all other races.

(5) This residual group, however, increased sevenfold between 1901 and 1931, whereas the total population did not quite double during those thirty years.

(6) The people of the various origins, as well as nativities, have had very mixed effects upon the rural and urban distribution of the Canadian population, the term origin meaning the race, stock or family extraction regardless of nativity or country of birth. The people of Hebrew, Greek, Italian and Chinese origins, for instance, have been predominantly urban, whereas the Russians, Ukrainians and Scandinavians have been basically rural; the Belgian urban percentage was actually a little less in 1931 than in 1911.

(7) The number of foreign countries whose natives in Canada are more than 50 p.c. urban is somewhat less than the number which have contributed a rural excess, but the former (the urban) had in our 1931 total population only about a fifth as many persons as the latter (the rural).*

(8) Our foreign born and Canadian born had in 1931 almost the same small rural preponderance, the rural being 52.18 p.c. and 52.73 p.c. respectively, as compared with 50.25 p.c. for the total population; those born in the British Isles had the decidedly low rural proportion of only 35.16 p.c. and the total of both ruralites and urbanites at 1,138,942 exceeded that of the foreign born by only about 16,000.

(9) The most urban of our foreign born are the Greeks (91.31 p.c.), followed by the Turks, Syrians, Italians and Chinese, whereas the most rural are the Northwestern Europeans, especially the Norwegians and Swedes.

(10) Of the group of countries whose natives in Canada have an urban preponderance, the one with the largest total in 1931 was Italy, more than one-third of the natives from that country living in our four largest cities—Montreal, Toronto, Vancouver and Winnipeg. In this group of countries, China was a close second, more than one-third of their urban numbers being in Vancouver.

(11) The United States is the largest single source of our foreign born; 58.01 p.c. of these are ruralites. Poland and Russia (with Ukraine) stood next in 1931, each with only a small rural excess. In Winnipeg's nativity list, Poland was surpassed only by Canada and England, while Russia (with Ukraine) was fifth.

(12) The Japanese in Canada are much more rural than urban. Nearly three-quarters of our urban Japanese in 1931 were in Vancouver—the other big urban centres had extremely few of them.

(13) In our largest cities, reviewed herein, the Canadian born surpass the number of persons in all other nativity groups combined. Those born in England are second throughout, but in all other rankings there is no consistency. In these cities the proportion of Britishers, exclusive of those of Canadian birth, has declined since 1911. The percentage of Canadian born people in Montreal, nearly 82 p.c. in 1931, exceeds by a wide margin that in Toronto, Winnipeg or Vancouver.

*The urban population in this comparison, as in all others in the part of this chapter dealing with nativity, includes only that of urban places of 1,000 and over, the balance being considered rural.

PART D
APPENDICES
PREREQUISITES TO URBAN INCORPORATION

APPENDIX I

ABBREVIATED DEFINITIONS OF URBAN MUNICIPALITIES

PREREQUISITES TO INCORPORATION IN REGARD TO POPULATION AND AREA BY PROVINCES

N.B.—The first figure in each section indicates minimum population required, unless otherwise stated.

PROVINCE	URBAN MUNICIPALITIES		
	City	Town	Village
PRINCE EDWARD Is...	Special legislation.	Population and area requirements not specified.	Population and area requirements not specified.
NOVA SCOTIA.....	Special legislation for each.	1,500, of whom 150 assessed—Area not exceeding 640 acres; area may be larger if more than 1,000 persons.	No incorporated villages in ordinary sense; "Village Supply Act" applicable to any area with 400 persons and not more than 640 acres.
NEW BRUNSWICK.....	Special legislation for each.	1,000—Area not specified.	300—Area not exceeding 1,500 acres.
QUEBEC.....	6,000—Area not specified.	2,000—Area not specified.	40 inhabited houses within 60 arpents and taxable, immoveable property on valuation roll at least \$50,000; population not specified.
ONTARIO.....	15,000—Area not specified but town of this population may have 3,300 acres with 200 acres added for each additional 1,000 population or fraction thereof.	2,000—Area not exceeding 700 acres; 200 acres or fraction may be added for each additional 1,000 population or fraction thereof. Town in northern districts, 500—Area not exceeding 750 acres; 300 acres or fraction may be added for each additional 500 population or fraction. Districts are not municipalities.	750—Area not exceeding 500 acres; 200 acres or fraction may be added for each 1,000 population or fraction thereof over 1,000. Police village, 150—Area not exceeding 500 acres; 20 acres added for each 100 population over 500; a police village is not an incorporated village.
MANITOBA.....	10,000—Area not specified but town of this population may have 1,280 acres with 160 acres added for each additional 1,000 persons.	1,500—Area not exceeding 640 acres, unless population exceeds 2,000; 160 acres added for each 1,000 persons.	500—Area not exceeding 640 acres unless population exceeds 2,000; 160 acres added for each additional 1,000 persons.
SASKATCHEWAN.....	5,000—Area not specified.	500—Area not specified.	100—Area not exceeding 240 acres.
ALBERTA.....	2,500 in practice, but neither population nor area specified in statutes.	700—Area of original village plus any adjoining land on which there is one dwelling or place of business for every 5 acres.	35 separate dwellings—Area, no limits specified except that no area annexed shall increase village to over 640 acres.
BRITISH COLUMBIA.....	100 male British adults—Area not exceeding 2,000 acres, except for police purposes.	No statutory provision for the incorporation of towns.	No population or area requirement specified.

APPENDIX 11

BRIEF STATEMENT OF THE LAW AND PRACTICE IN EACH PROVINCE IN REGARD TO URBAN INCORPORATION

PRINCE EDWARD ISLAND

(A) GENERAL ACTS:—

- (1) **VILLAGES:** Towns and Villages Act, S.P.E.I. 1870, c. 20: This statute, entitled "An Act for the better government of certain towns and villages in this Island", was passed in 1870 and amended by S.P.E.I. 1874, c. 19. Incorporations may be granted under the Act but it does not specify a population requirement. No incorporations have been made under its authority.
- (2) **TOWNS:** Towns and Villages Act, S.P.E.I. 1870, c. 20: See Item (1) above.
- (3) **CITIES:** No general statutory provision is made for the erection of cities.

(B) SPECIAL ACTS:—

By this term is meant a Special Act of the provincial legislature. All incorporations have been made under Special Acts.

NOVA SCOTIA

(A) GENERAL ACTS:—

- (1) **VILLAGES:** Village Supply Act, R.S.N.S. 1923, c. 88: No statutory provision has ever been made for the incorporation of a village, but under this Act the Governor-in-Council may appoint three commissioners to be a body corporate to administer and control such affairs of a village as water supply, police and fire protection, etc. The Act specifies that the village must have a population of 400 on an area not exceeding 640 acres.
- (2) **TOWNS:** Towns' Incorporation Act, R.S.N.S. 1923, c. 84: Section 4 reads as follows,—
"No town shall be incorporated under this chapter, the population of which does not exceed 1,500 persons, 150 of whom shall be assessed and rated upon real and personal property or both, and dwell within an area (reasonably compact) of not more than 640 acres of land; provided that if 1,000 persons dwell within such an area of 640 acres, a larger area than 640 acres may be embraced in the original boundaries of the town".
- (3) **CITIES:** There is no general statutory provision in regard to the incorporation of a city.

(B) SPECIAL ACTS:—

Cities and villages may be incorporated under Special Acts. Localities not having the statutory requirements may also be erected into towns under Special Acts.

NEW BRUNSWICK

(A) GENERAL ACTS:—

- (1) **VILLAGES:** Villages Incorporation Act, R.S.N.B. 1927, c. 180: No statutory provision for the erection of a village existed until this Act was passed in 1920. It requires a population of 300 persons on an area not greater than 1,500 acres of land, except that under special circumstances, when the area of the proposed village contains a "relatively thickly settled population", although less than 300 persons, the Governor-in-Council may provide for its incorporation under the Act.
- (2) **TOWNS:** Towns Incorporation Act, R.S.N.B. 1927, c. 179: Previous to the passing of this Act in 1896, no statutory provision existed for the erection of a town. Section 4 of the statute reads as follows,—
"When the inhabitants of a town not now incorporated desire to become incorporated hereunder, a requisition, signed by at least fifty ratepayers of the town, shall be presented to the sheriff of the county in which such town is situate, requesting such sheriff to hold an election of the ratepayers of the town to determine whether the inhabitants thereof shall become incorporated under the provisions of this Chapter". The sheriff shall not act upon such a requisition unless he is satisfied that the population within the boundaries of the proposed town exceeds 1,000.
- (3) **CITIES:** No general statutory provision has ever been made in regard to the erection of cities.

(B) SPECIAL ACTS:—

Cities may be erected by Special Acts. Villages and towns may also be erected under Special Acts if they have not the statutory requirements of the Villages Incorporation Act or the Towns Incorporation Act.

QUEBEC

(A) GENERAL ACTS:—

- (1) **VILLAGES:** Municipal Code, 1916, Art. 37, annotation, 1932: Any territory, in order to be erected into a village municipality, must contain at least 40 inhabited houses within a space of 60 superficial arpents and the taxable immoveable property in such territory must have a value, according to the valuation roll in force, of at least \$50,000. Nevertheless, in the case of a territory not already forming part of a city, town, village or parish municipality, and situated within 3 miles of the National Transcontinental Railway, it is sufficient for the application to be signed by at least 25 proprietors of immoveable property in such territory.
- (2) **TOWNS:** Cities and Towns' Act, R.S.Q. 1925, c. 102: Under section 12 of the statute the Lieutenant-Governor-in-Council may, by letters patent and in accordance with the formalities prescribed in the Act, erect the territory of a village municipality into a town municipality, if it contain at least 2,000 souls.
- (3) **CITIES:** Cities and Towns' Act, R.S.Q. 1925, c. 102: Under section 12 of the statute, the Lieutenant-Governor-in-Council may, by letters patent and in accordance with the formalities prescribed in the Act, erect the territory of a village or town municipality, if it contain at least 6,000 souls, into a city municipality.

(B) SPECIAL ACTS:—

Communities unable to satisfy the statutory requirements of the Municipal Code or the Cities and Towns' Act may be erected into villages, towns and cities by Special Acts.

ONTARIO

(A) GENERAL ACTS:—

- (1) **VILLAGES:** Municipal Act, R.S.O. 1937, c. 266: In the counties, a part of a township or parts of two or more townships or a police village, having a population exceeding 750 on an area not exceeding 500 acres, may be erected into a village. It may have 200 acres or a fraction thereof added for each additional 1,000 or fraction thereof in excess of 1,000 of its population. An addition shall not be made to any village which will have the effect of increasing its area beyond the prescribed limit. Land occupied by highways, parks and public squares and land covered by water shall be excluded in determining the area. In the northern districts, villages are incorporated by Special Acts of the Legislature. A locality may be erected into a police village, if it has a minimum population of 150 on an area not exceeding 500 acres; 20 acres may be added for each 100 population over 500. A police village, while having certain local powers, is not an incorporated village; for general municipal purposes it forms part of the township in which it is situated.
- (2) **TOWNS:** Municipal Act, R.S.O. 1937, c. 266: In the counties, a village having a population of 2,000 may be erected into a town, which shall not exceed 500 acres for the first 1,000 or less, with 200 acres or a fraction thereof added for each additional 1,000 or fraction thereof in excess of 1,000 of its population. In the northern districts, the area of a town shall not exceed 750 acres for the first 500 of its population, with 300 acres or fraction thereof added for each additional 500 of its population or fraction thereof. An addition shall not be made to any town, which will have the effect of increasing its area beyond the prescribed limit. Land occupied by highways, parks and public squares and land covered by water shall be excluded in determining the area.
- (3) **CITIES:** Municipal Act, R.S.O. 1937, c. 266: A town having a population of 15,000 may be erected into a city.

(B) SPECIAL ACTS:—

Localities which do not qualify as to population and area under the Municipal Act may be erected into villages, towns and cities by Special Acts.

MANITOBA

(A) GENERAL ACTS:—

- (1) **VILLAGES:** Municipal Act, S.M. 1933, c. 57: When a locality contains over 500 inhabitants and when the residences of such inhabitants are "sufficiently close together to form an incorporated village", the Lieutenant-Governor-in-Council, upon petition, may by letters patent incorporate the inhabitants of such locality as a village corporation. No village so incorporated shall occupy an area of more than 640 acres, unless its population exceeds 2,000, in which case 160 acres may be added for every additional 1,000 inhabitants over the first 2,000. The Lieutenant-Governor, upon petition, and subject to the provisions of the Act, may by proclamation add to the village any part of the adjacent localities which, from the proximity of the streets or buildings therein, or the probable future exigencies of the village, it may seem desirable to add thereto.

MANITOBA—Concluded

(A) GENERAL ACTS:—Concluded

- (2) **TOWNS:** Municipal Act, S.M. 1933, c. 57: When a locality contains over 1,500 inhabitants, the Lieutenant-Governor-in-Council, upon petition, may by charter or letters patent incorporate the inhabitants of such locality as a town corporation. No town incorporated after the passing of this Act, the population of which does not exceed 2,000, shall occupy an area of more than 640 acres. If the population exceeds 2,000, the limits may be increased in the proportion of 160 acres for every additional 1,000 inhabitants. Public parks are excluded in calculating area. When a village contains over 1,500 inhabitants, it may be erected into a town by proclamation.
- (3) **CITIES:** Municipal Act, S.M. 1933, c. 57: A town containing over 10,000 inhabitants may be erected into a city by proclamation. Except in particular cases where it is especially made applicable, the Act does not apply to the City of Winnipeg or the City of St. Boniface.

(B) SPECIAL ACTS:—

Localities which do not qualify under the Municipal Act may be incorporated by Special Acts.

SASKATCHEWAN

(A) GENERAL ACTS:—

- (1) **VILLAGES:** Village Act, S.S. 1936, c. 37: No portion of the Province shall be erected into a village with an area greater than 240 acres of land and no such portion shall be so erected unless it contains not less than 100 persons actually resident therein. It is erected by the Minister of Municipal Affairs upon petition, notice of which is published in the *Saskatchewan Gazette*. The residents of a summer resort may petition the Minister to have the area of such summer resort erected into a village, and when such village has been erected, the provisions of this Act apply with certain exceptions. The Minister may by order, notice of which shall be published in the *Saskatchewan Gazette*, (a) sever any portion of a village and annex the same to any adjoining municipality, (b) annex to any village any outlying area adjacent to but not included within the limits of any city, town or village, (c) alter and adjust the boundaries of two or more coterminous or adjacent villages or rural municipalities.
- (2) **TOWNS:** Village Act, S.S. 1936, c. 37: Section 344 provides for the erection of villages into towns. It stipulates that no village shall be erected into a town unless it contains over 500 persons actually resident therein. It is erected by proclamation upon application of the village council.
- (3) **CITIES:** Town Act, S.S. 1937, c. 28: Section 608 provides that upon the petition of the council the Lieutenant-Governor-in-Council may by proclamation to be published in the *Saskatchewan Gazette* declare any town which has a population of 5,000 or more to be a city.

(B) SPECIAL ACTS:—

Localities which do not qualify under the Village Act and Town Act may be erected into urban municipalities by Special Acts.

ALBERTA

(A) GENERAL ACTS:—

- (1) **VILLAGES:** Town and Village Act, S.A. 1934, c. 49: By Part I of the new Act, the Minister may form into a village any part of the Province, which is not in whole or in part included in a city, town or village, if such part contains not less than 35 separate buildings, each of which has been occupied continuously as a dwelling house for a period of at least one month; he may do so of his own motion or upon receipt of a petition. The Minister may form into a summer village any summer resort either of his own motion or upon receipt of a petition. The Board of Public Utility Commissioners may by order published in the *Alberta Gazette* alter the boundaries of a village provided that no area shall be annexed to any village, the addition of which would make the area of such village more than 640 acres.
- (2) **TOWNS:** Town and Village Act, S.A. 1934, c. 49: By Part II of the new Act, the Lieutenant-Governor-in-Council may by proclamation form into a town any village, together with any land additional thereto, (a) if the village contains over 700 inhabitants, and (b) if the proposal to form the village, together with any additional land which it is desired to include with the village, into a town, has been approved by two-thirds of the electors of the village voting thereon. Any additional land must have at least one building actually occupied as a dwelling house or place of business for every five acres included therein. The proclamation shall be published in the *Alberta Gazette*. Provision is also made for alteration in the boundaries of a town; additional territory must contain at least one building actually occupied as a dwelling-house or place of business for every five acres included therein.

ALBERTA—Concluded**(A) GENERAL ACTS:—Concluded**

- (3) **CITIES:** There are no general statutory provisions for the incorporation of cities but in practice a town must have a population of 2,500 before erection into a city.

(B) SPECIAL ACTS:—

Localities which do not qualify under the aforesaid Acts may be incorporated by Special Acts. All cities are incorporated by Special Acts.

BRITISH COLUMBIA**(A) GENERAL ACTS:—**

- (1) **VILLAGES:** Village Municipalities Act, R.S.B.C. 1936, c. 203: The Lieutenant-Governor-in-Council may by letters patent incorporate the inhabitants of any area which is not included within the limits of any municipality a body corporate as a village municipality.
- (2) **TOWNS:** There is no Act providing for the incorporation of towns.
- (3) **CITIES:** Municipalities Incorporation Act, R.S.B.C. 1936, c. 202: The Lieutenant-Governor-in-Council may by letters patent incorporate into a city municipality any locality in the Province not exceeding 2,000 acres in area and having a resident population of at least 100 male British subjects of the full age of 21 years.

(B) SPECIAL ACTS:—

Localities which do not qualify under the foregoing Acts may be incorporated by Special Acts. The City of Vancouver operates under a special charter, *viz.*, "Vancouver Incorporation Act 1921 and Amendment Acts".

**RACIAL ORIGINS AND NATIVITY OF THE
CANADIAN PEOPLE**

by

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SUMMARY

NOTE.—It should be clearly understood by the reader of this summary and the report proper that the conclusions reached apply only to those portions of the several nationalities and stocks which have emigrated to and are now a part of the population of Canada.

RACIAL ORIGINS OF THE POPULATION OF CANADA, 1901-1931

In 1931, 51.86 p.c. of the population of the Dominion was of British stock and 28.22 p.c. French. Other European origins constituted 17.59 p.c., Asiatics less than 1 p.c. and all others, including Indians and Negroes, approximately 1.50 p.c. All coloured people combined totalled slightly over 2 p.c. The population of Canada, as a whole, is predominantly British and French, these two stocks constituting 80 p.c. of the total. Other white races, principally Europeans, accounted for nine-tenths of the remaining 20 p.c.

In numbers, the North Western Europeans (other than British and French) exceeded the South, Eastern and Central Europeans by 12 p.c. in 1931 as compared with 20 p.c. in 1921. Numerically the most important foreign stocks in Canada of North Western European origin are the German, Dutch, Norwegian and Swedish in the order named; among the South, Eastern and Central Europeans, those reported as of Ukrainian, Polish, Italian and Russian origins. Approximately one-tenth of the population is accounted for by five foreign stocks, the German (474,000), Ukrainian (225,000), Hebrew (157,000), Dutch (149,000) and Polish (146,000).

Since the beginning of the century, the composition of the population of Canada has been in a state of rapid change (see Fig. 1). The proportion of Anglo-Saxons has dropped materially and that of the French moderately, while the percentage of foreign European has shown a consistent and drastic increase.

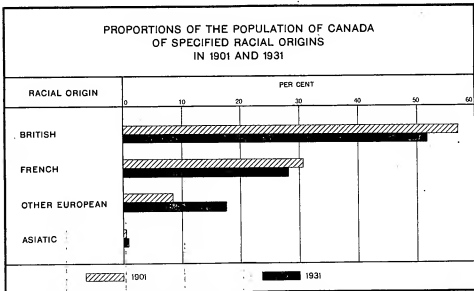


FIG. 1. Foreign immigration, native emigration and differential fertility have effected radical changes in the origin structure of the population of Canada during the last three census decades. Differential rates of natural increase, if continued, will bring about quite as drastic changes in the years to come. On the basis of current birth and mortality rates the population of French origin would increase 124 p.c. in the next forty years, that of foreign origins 73 p.c. and that of Anglo-Saxon origin 20 p.c. Thus in 1971, the French and Anglo-Saxons would each constitute 39 p.c. of the Canadian population and foreign origins 22 p.c. These estimates take no account of possible future immigration (or emigration).

In the absence of the customary volume of immigration from the British Isles during the last decade (1921-31) the French increased almost twice as rapidly as the Anglo-Saxon races; with the resumption of moderate immigration from Continental Europe and continuing higher birth rates among earlier immigrants, foreign European stocks increased nearly four and

a half times more rapidly than the British. The rate of increase for the South, Eastern and Central Europeans exceeded that of the North Western Europeans by 25 p.c. Even without further immigration (or emigration) differential fertility alone, if continuing on anything like the present scale, promises to effect quite as radical changes in the racial composition of the future Canadian population as have occurred in the past (see Chapters VII and XIII).

BIRTHPLACE AND LENGTH OF RESIDENCE

In 1931, 97 p.c. of the French and 75 p.c. of the Anglo-Saxons in Canada were Canadian-born. The North Western Europeans showed 64 p.c. of Canadian birth as against 48 p.c. for the South, Eastern and Central Europeans. Among the linguistic groups, the Germanic with 71 p.c. had the highest figure though the Slavs and Latins and Greeks both showed somewhat higher proportions Canadian-born than the Scandinavians. A relatively large percentage of the latter group was born in the United States so that from the standpoint of date of arrival on this continent the Scandinavians with the Germanic peoples belong to the older immigrants. Considerable overlapping, however, exists. Of all foreign European origins the Dutch showed the largest proportion born in North America (86 p.c.), the Germans ranked next (79 p.c.); they are followed by the Icelandic and Norwegian races. The Belgians on the other hand are relatively recent arrivals. The Swedes though usually considered as among the earlier immigrants have smaller proportions Canadian- and United States-born than the Russians, Ukrainians or Austrians; the Danes follow the Roumanians who are next below the Swedes. The relative position of the several races is, of course, affected by their individual fertilities, differences in which tend to minimize the disparity in dates of arrival as measured by the proportions North American-born. In 1931, 16.3 p.c. of the Scandinavian and 8.5 p.c. of the Germanic origin groups resident in Canada were of United States birth as against less than 2 p.c. of the Slavs and Latins and Greeks.

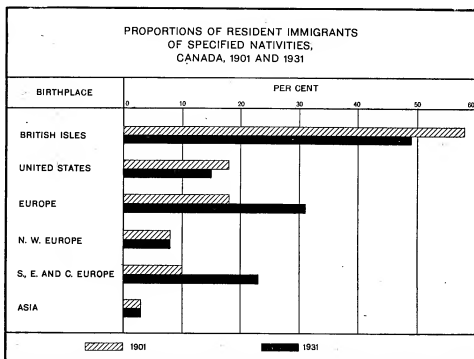


FIG. 2. This figure shows the effects of the disproportionate increase in immigration from Continental Europe during the first thirty years of the century. Immigrants from the British Isles now constitute less than half of all resident immigrants in Canada, Continental Europeans nearly a third, United States born about 15 p.c., and Asiatics less than 3 p.c. South, Eastern and Central Europeans outnumber North Western Europeans by three to one.

Of the resident immigrants from the United States in Canada in 1931, approximately 51 p.c. were of British racial origin and 16 p.c. of French. If to these be added United States-born immigrants of German, Dutch and Scandinavian extraction one has a total of 94 p.c. Immigration from the United States has included practically no South, Eastern and Central Europeans.

The net effect on our population structure of immigration, emigration and natural increase during the last decade (1921-31) has been a decrease in the relative importance of both the British (other than Canadian) and United States born and an increase in the absolute and relative importance of the other foreign-born portions of our population. There was a net emigration of United States-born Anglo-Saxons back to the States and a net immigration into Eastern Canada of descendants of earlier French-Canadian emigrants to the New England States. On balance the United States immigrants resident in Canada showed an absolute decline.

Over the period 1901-31 the number of resident immigrants in Canada increased more than three times faster than the Canadian-born population. Radical changes also have taken place in the source of Canadian immigration. Thirty years ago three out of five resident immigrants were from British countries; now the ratio is half and half. In 1901, United States-born residents of Canada slightly outnumbered Continental Europeans; in 1931, Continental Europeans exceeded United States-born by two to one. At the turn of the century only a slight disparity existed between the proportion of resident immigrants from North Western and South, Eastern and Central Europe; at the date of the last census the latter outnumbered the former by nearly three to one (see Fig. 2).

During the last decade the rate of increase of the British born dropped to half that in the previous decade while that of the Continental Europeans as a whole more than quadrupled with the result that it exceeded that for the British Isles and British Possessions by between four and five times. Among the Continental European immigrants only the Latin and Greek group failed to maintain a rate of increase several times greater than that for the population as a whole. The South, Eastern and Central European born increased nearly twice as rapidly as the North Western Europeans. Poland, Russia, Hungary, Czechoslovakia, Germany, Finland, Yugoslavia and Roumania were heavily represented in descending order in the nativities of immigrants coming to Canada from Continental Europe between 1926 and 1930, the portion of the decade in which most of the immigration occurred.

SEX, AGE AND CONJUGAL CONDITION

Sex.—Differences in sex distribution have an important bearing on criminality and law enforcement; indirectly, sex differences also throw light on the differing behaviour of immigrant peoples in respect to permanency of residence in Canada, conjugal condition, intermarriage and a number of other social phenomena. Marked disparity in sex ratio exists as between the various racial origins in Canada but of more direct interest are the differences in the sex composition of immigrant groups (see Fig. 3). Immigration and emigration are the basic causes of all major sex inequalities in our population. The percentage surplus of males in the population as a whole was approximately 7 p.c. in 1931; that in the immigrant section of the population approximately 28 p.c. or four times greater. Immigration was responsible for about 78 p.c. of the sex inequality of the population of Canada as a whole; some 96 p.c. of the surplus males in the total immigrant population of Canada in 1931 were over 21 years of age. Great variation occurs in the degree of sex inequality of the different origin and nativity groups. Certain peoples tend to migrate as families; then sex distribution is more or less evenly balanced. With others, emigration consists largely of unattached males who swell the large single floating male population of the country which constitutes a social problem of some magnitude. With the resumption of immigration in the post-War decade the surplus of unattached males increased for most immigrant groups.

Age.—In making comparisons between different population groups with regard to social or anti-social behaviour, age distribution is an important factor which must be reckoned with before valid conclusions can be reached. Important as are age statistics as means of correcting crude data before comparing two or more sections of a population in respect to a given characteristic, they are equally valuable in helping to explain such differences in the behaviour as are attributable solely to the absence of persons of other ages in normal proportions.

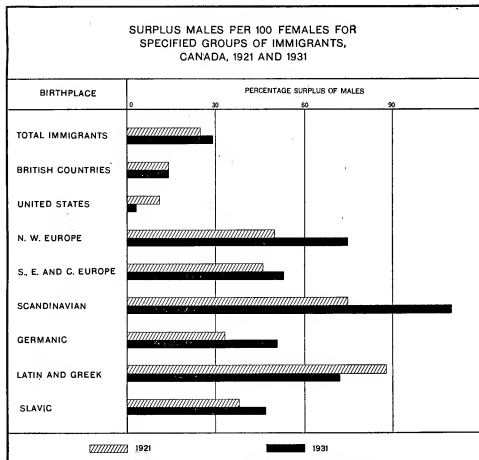


FIG. 3. The resumption of immigration in the post-War decade increased the surplus of males for most immigrant groups. The special circumstances accounting for the exceptions are discussed in the body of the report. A surplus of males consists almost entirely of adult males in the prime of life. The presence of large numbers of unattached males creates social problems of some magnitude.

Marked differences exist in the age distribution of the different nativities in Canada. Among the Canadian born, the proportion of children under 15 years of age was 4.8 times larger than that for the foreign born and 7.5 that for the British born. To compensate for the small percentage of children among the immigrant population both the British and foreign born show proportions very much larger than the Canadian born in the age groups 25 to 55. The largest percentage of males of foreign birth was in the age group 30-34 while the largest percentage of males of British birth appeared in the group 45-49. Similar percentages for the females occur in the quinquennial age groups immediately preceding. These differences are largely a matter of recency of immigration. The social effect of such radical differences in age distribution is illustrated in subsequent parts of the monograph, particularly in that dealing with criminality.

Equally significant are the differences in age distribution of the various stocks in Canada. An origin includes not only the foreign born but their Canadian-born children and thus has a more or less real and distinct existence as a population group. Next to the Chinese and a few origins which have been augmented by abnormally heavy immigration in recent years the British show the lowest proportion under 10 years of age. They are followed by the Scandinavian, Germanic, Slavic, French and Latin and Greek groups in the order named. While the proportion of young children in an origin group is a function of several factors—sex distribution, recency of immigration and fertility—a large proportion is almost invariably associated with high fertility (see Chapter XIII).

Conjugal Condition.—The 1931 Census tabulations make possible for the first time a study of the conjugal condition of the individual races which go to make up the Canadian population. Larger proportions of males than of females 15 years and over are unmarried in the case of every origin for which data are available. This fact is associated with inequality of the sexes attributable largely to immigration. For the population as a whole 40.93 p.c. of the males 15 and over were unmarried in 1931 as against 34.01 p.c. of the females, a proportion some 20 p.c. greater.

Not only do larger percentages of foreign European origins marry but they marry younger than females of the basic Anglo-Saxon stock. What applies to the group as a whole applies to an even more marked degree to races like the Ukrainian, Polish, Italian and Russian who as population groups are among the more recent arrivals on this continent. The disparity decreases with the Germans, Dutch and Scandinavians and other Western European races containing smaller proportions of immigrants.

Differences in age and sex account for approximately 50 p.c. of the differences in the proportions of the females of the different origins who were unmarried in 1931, and age, sex, the percentage of eligible males to all males, the ratio of eligible females to eligible males and illiteracy combined account for slightly over 90 p.c. of the differences. The determining factors were age and sex distribution—more especially sex distribution—and economic status in relation to the customary standard of living which in a good many cases reduces itself to simple economic capacity to support a wife. The latter is lacking more particularly among races especially exposed to depression conditions whether because of recent arrival in this country or because of heavy representation in occupations particularly subject to unemployment during periods of economic stress. Since the above variables which are largely non-racial in character account for such a high percentage of the differences between the racial origins in the matter of the proportions of females married, it follows that the *propensity* to marry differs very little as between the races. The only significant difference seems to be that some marry younger than others.

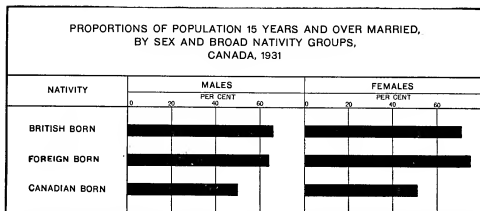


FIG. 4. Many factors affect the proportions of a given nativity married—age and sex distribution, economic capacity, ratio of eligible males to eligible females, differences in mores as to age of marriage, etc. No significant differences seem to exist in the *propensity* to marry as between the several ethnic groups in our population. In this respect statistics on conjugal condition tell a different story from data on fertility. The above graph, however, emphasises one important reason why immigrant stocks are contributing disproportionate numbers to the present and future population of the country.

In Canada as a whole the proportions of the British and of the foreign born 15 years of age and over who either are married or have been married are appreciably greater than that for the Canadian-born population. That this should be true of the immigrant males despite a large shortage of immigrant females is significant. The fact that these differences may be attributed in part to lower age of marriage customary among immigrant people and in part to differences in age distribution, does not alter their importance from the standpoint of the relative contribution that these nativities might be expected to make to the future population of Canada (see Fig. 4).

DISTRIBUTION OF IMMIGRANT STOCKS BY PROVINCES

The racial structure of the population of the Dominion differs radically as between the various sections of Canada. The proportion of Anglo-Saxon stock varies from 84 p.c. in Prince Edward Island to 15 p.c. in Quebec. Nova Scotia, Ontario and British Columbia are between 70 and 80 p.c. Anglo-Saxon, New Brunswick around 63 p.c. and the Prairie region about 50 p.c. Approximately 80 p.c. of the population of Quebec are French and 33 p.c. of the residents of New Brunswick. In the other Maritime Provinces French constitute between 10 and 15 p.c. of the population and from 9 to 2 p.c. from Ontario west, the lowest proportion being in British Columbia. The relative density of foreign European stocks in the mid-western provinces is from two and a half to some forty-five times greater than in other parts of the Dominion and, on the average, perhaps four times greater than in the East as a whole. An appreciation of this phenomenal lack of inter-regional racial homogeneity is essential to a proper understanding of many important phases of our national life.

During the last decade, the decline in the proportions of Anglo-Saxons has continued in all sections of Canada. This decline is attributable to immigration which was largely of non-British origin, emigration of Canadian born (largely Anglo-Saxons) and high fertility on the part of non-Anglo-Saxon races. The declines were most marked in the West. In Saskatchewan the majority of the population is now non-Anglo-Saxon, and a continuation of present trends promises to bring about a similar situation in both Manitoba and Alberta before the next decennial census. Despite the absence of French immigration the proportion of that origin in the populations of most provinces moved slightly upward except in Quebec, which experienced a considerable emigration of native French Canadians to the States and an appreciable immigration of foreign stocks. Significant increases in the relative importance of Continental European stocks occurred in all provinces except the Maritimes where the numbers are negligible.

The proportions of the population *foreign-born* range from less than 2 p.c. in Prince Edward Island to 27 p.c. in Alberta, 24 p.c. in Saskatchewan and close to 19 p.c. in Manitoba and British Columbia. The largest proportion shown in any eastern province was 8 p.c. for Ontario. The proportion *Canadian-born* ranges from over 97 p.c. in Prince Edward Island at the extreme east to 54 p.c. in the far west. The Prairies show from 58 to 66 p.c. Relative to the population, British immigration has been heaviest to British Columbia where 27 p.c. of the 1931 population was born in British countries other than Canada. The proportions of British born in Ontario, Manitoba and Alberta are approximately 15 p.c.; in Saskatchewan 11 p.c. In no province east of Ontario do British immigrants constitute a significant element in the population.

In Ontario and British Columbia the proportion of the population of *British birth* (outside Canada) is from half again to twice as large as the proportion of foreign birth; in Manitoba there are about a quarter more foreign than British born, in Alberta and in Saskatchewan approximately twice as many (see Fig. 5). Thus while the West generally has gained more than Ontario and many times more than the provinces east of Ontario through past immigration, it has received a disproportionately large share of alien stocks. Ontario was the one eastern province that got more than its quota of British immigration.

Alberta shows larger proportions of her population born in the United States, in Scandinavian countries, in Germanic countries and in Latin and Greek countries than does any other province in the Dominion and she ranks second only to British Columbia in the percentage of Asiatics. Manitoba has by far the largest percentage of Slavic nationalities. Saskatchewan stands second for all foreign groups of nationalities except the Scandinavian and Asiatic. Other western provinces hold third and fourth places for all foreign nativity groups other than the South, Eastern and Central Europeans, who now constitute a fractionally larger proportion of the population of Ontario than of British Columbia, although the actual percentage is appreciably less than half that for the Prairie region generally.

In the four western provinces as a whole the percentage of foreign born in the population has declined steadily since the beginning of the century. In all five eastern provinces the proportion has consistently increased. A greater proportion of foreign immigration is finding its way to Eastern Canada than formerly and a smaller proportion is going west. The same is true of the British. The figures, especially those of the last decade, suggest a marked shifting of the relative capacity of Eastern and Western Canada for absorbing immigration from other countries whether British or foreign.

**PERCENTAGES OF SPECIFIED FOREIGN NATIVITIES IN THE
POPULATION OF THE SEVERAL PROVINCES,
1931**

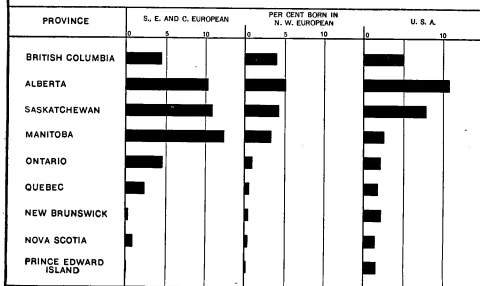


FIG. 5. Immigration is the original source of the growing lack of ethnic homogeneity as between the English-speaking provinces of the Dominion. Its influence may be judged by comparing the lengths of the bars for the Prairie region and British Columbia with those for the Eastern Provinces. While the direction of foreign immigration is shifting eastward, the West is still receiving more than its share. Natural increase will continue to accentuate the ethnic cleavage between East and West even in the absence of further immigration.

Comparison of the 1931 and 1921 figures provides further evidence of the declining importance of British and the increasing importance of the foreign born in the immigrant population of the country. This trend appears in all provinces save one (New Brunswick) and is most marked in Ontario, Manitoba, Quebec and Prince Edward Island. In these provinces the foreign born constituted a proportion of resident immigrants from 4 to 6 p.c. larger in 1931 than in 1921 and corresponding declines occurred in the percentage of resident immigrants of British birth.

While since the War, Ontario and Quebec have received a larger proportion of foreign immigrants than formerly, up to 1931 the West was still receiving more than its share. A generation of foreign settlement largely directed toward the West has created tremendous differences in the nativity as well as the racial composition of the population in the eastern and western parts of the Dominion. Even if these differences are not accentuated by further immigration, they will continue to increase as a result of differential fertility. In so far as differences in population composition make for differences in culture, the above findings would seem to merit thoughtful consideration by all who are interested in the creation of a united Canadian people.

URBAN AND RURAL DISTRIBUTION

Marked differences in the proportions urban existed as between the various groups of immigrants resident in Canada in 1931. The Asiatics were the most urban with 74.68 p.c. living in incorporated cities, towns or villages and the Scandinavians the lowest with only 34.58 p.c. Of the Europeans, immigrants from the British Isles and Latin and Greek countries (Roumania excepted) show marked preferences for urban life and urban occupations; the Slavs and United States born are about equally divided between city and country and the Germanic immigrants like the Scandinavians are definitely rural though not to quite the same extent (see Fig. 6).

During the decade 1921-31, urban industries and urban occupations appear to have been able to absorb a much larger share of the new immigration than have the rural. Not only did urban centres attract a disproportionate percentage of current immigration (nearly three-fifths of the total) but they seem to have suffered less from emigration of earlier immigrants and/or to have gained through a net rural-urban migration of pre-1921 rural immigrant settlers. Of the estimated net addition to the total foreign-born population in Canada between 1921 and 1931 over 75 p.c. was urban. The figures indicate an underlying change in the direction of immigration as between rural and urban parts during the decade.

In 1931, the foreign born were more urban than the Canadian born in the *six* eastern provinces and less urban in the *three* western provinces. Urbanization among the immigrants has been proceeding less rapidly than with the Canadian born in New Brunswick, Quebec, Ontario and British Columbia; it has been proceeding more rapidly in Prince Edward Island, Nova Scotia and the Prairie Provinces.

For all but three countries of birth the percentage of females urban exceeds the percentage of males. The difference between the sexes in this regard is greater for the immigrants than for the Canadian born and greater for the North Western than for the South, Eastern and Central Europeans.

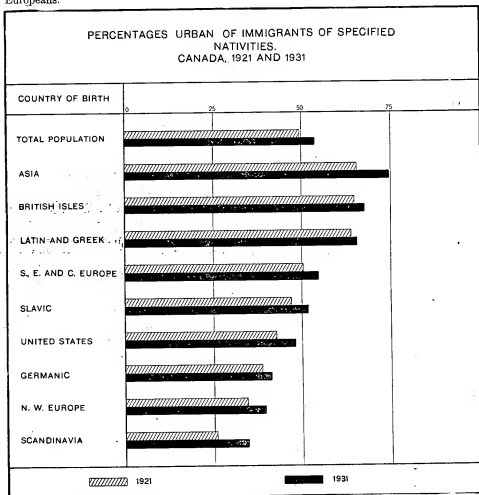


FIG. 6. Immigrants from Asia, the British Isles, Italy and Greece are the most urban settlers in Canada while those from North Western Europe and particularly from Scandinavia are the most rural. Great variation, however, exists as between individual nationalities within the geographical and linguistic sub-classifications. The marked increases in the percentages of immigrants resident in urban centres reflects not only a definite change from rural to urban settlement on the part of new immigrants but a cityward drift on the part of the old.

Not only are the immigrant sections of the various *stocks* generally more urban than the Canadian-born sections but the adult portions of the several origins are more urban than the children. The latter circumstance is associated with higher birth rates in rural parts and less inequality of the sexes among the adults. The tendency of females to congregate in urban centres exceeds that of the males for the racial as well as the nativity grouping.

Approximately 29 p.c. of the population of Canada lived in cities of 30,000 and over in 1931. The Hebrews had a percentage in large cities nearly three times greater than had the population as a whole; the Greeks, Bulgarians and Lithuanians proportions over twice greater; the percentages for the Chinese, Italians and Syrians were between 50 and 100 p.c. larger; and those of the Japanese, Negro, British and Hungarian origins from 1 to 50 p.c. larger. The tendency to avoid large cities was most marked in the case of the Norwegians, the Dutch and the Swedes.

A considerably greater concentration in the metropolitan areas was in evidence in 1931 than in 1921, both for the population as a whole and for all but seven of the thirty racial origins for which separate data are available.

SEGREGATION

Segregation whether rural or urban, voluntary or involuntary, constitutes one of the greatest obstacles to those personal and social contacts which alone can break down the barrier between peoples of different nationalities and racial origins. In any study dealing with the aptitude of different peoples for acquiring Canadian customs and ideals and for fitting into the social, political and economic life of the nation, an adequate measure of evenness of spread, or its converse, segregation, is of first importance. To be of any value or significance from the point of view of the present study, a measure of evenness of spread must be related to the existing geographical distribution of the population as a whole. A racial origin or nativity group to be perfectly evenly spread among the population of the Dominion must not only have representation in every section of the country, but that representation must conform, after making due allowance for difference in absolute numerical strength, to the relative distribution of the population as a whole over the inhabited area. Two indices were computed designed to meet the above requirements, one for the principal nativity groups in Canada and the other for the principal racial origins.

Before describing the indices two or three points regarding their meaning merit attention. (a) Evenness or unevenness of spread is usually only partly volitional. It is frequently to a large extent a function of conditions prevailing in the country at the time of and subsequent to settlement. (b) The tendency of a minority group toward wide dispersion over the settled areas of Canada argues a measure of indifference to climatic conditions, occupations and indirectly a high degree of aptitude for adjustment to different physical and occupational environments. (c) The more even the spread the more generally and permanently is an immigrating people placed in a minority position. Where such occurs one may presume an absence of other than personal motives in immigrating, and where the evenness of spread is volitional an absence of group consciousness and a readiness to identify personal interests with those of the country at large. (d) Finally, one must distinguish between *propensity* to spread which is a *bona fide* characteristic of the group, *capacity* to spread which is a function of the size of the group and *necessity* to spread which occurs as a result of uneconomically high population density in an area. In constructing the indices the influence of size was eliminated, size being the chief factor limiting the capacity for dispersion if very small or giving rise to the necessity for it if very large. The indices are designed thus to measure propensity to segregate, freed as far as possible from the influence of accidental and extraneous circumstances.

The range for the *nativity* index is from 100 for immigrants from Scotland to 247 for the Japanese. Among the nationalities showing the least tendency to segregate are the British Isles, Denmark, France, Holland, Switzerland, United States, Belgium, Germany and Austria in ascending order, the figures ranging from 100 for immigrants from Scotland to 125 for immigrants from Austria. Immigrants from Poland, Czechoslovakia, China, Sweden, Roumania, Norway, Russia and Hungary occupy an intermediate position with indices between 129 for Poland and 146 for Hungary. The balance, i.e., the Italians, Finns, Lithuanians, Greeks, Yugoslavs, Bulgarians, Icelanders and Japanese show more than the average tendency to segregate. The figures for the latter group run from 155 for the Italians to 247 for the Japanese as noted above.

The position of the various nativities in the list does not follow any definite geographical grouping. It is true, however, that immigrants from Britain, the United States and Germanic countries segregate much less than those from Slavic, Latin and Greek and Scandinavian countries, Denmark excepted.

The racial index has a wider range being based on municipal rather than county data. Here a distinct division appears. The Anglo-Saxons, Scandinavians and Germanic peoples spread much more evenly than do the Slavs and Latins and Greeks. The North American Indians and the Hebrews show the greatest tendency to segregate.

Neither of the above indices distinguishes between rural and urban segregation. When they are studied in conjunction with the data on rural and urban distribution in the preceding section the reader will have no difficulty in determining which type of segregation is characteristic of the several nativity and origin groups.

INTERMARRIAGE

Intermarriage is at once an index and a method of assimilation. The foreign stocks in Canada show great differences both in respect of the extent to which they have intermarried with each other and with the basic stocks of the country and of their inclination to do so. Some stocks like the Orientals, Hebrews and certain of the South, Eastern and Central European peoples do not readily assimilate by intermarriage; others do so with considerable ease and rapidity.

By 1931, 37.8 p.c. of the married men and 37.6 p.c. of the married women of North Western European origins had married outside their respective stocks, as against 18.4 p.c. of the men and 18.0 p.c. of the women of South, Eastern and Central European stocks. Thus the North Western Europeans as a group had intermarried with others over twice as much as the Eastern and Central Europeans. Of the linguistic groups, the Scandinavians had married out to the greatest extent—approximately 54 p.c. for the men and 52 p.c. for the women; the Germanic peoples ranked

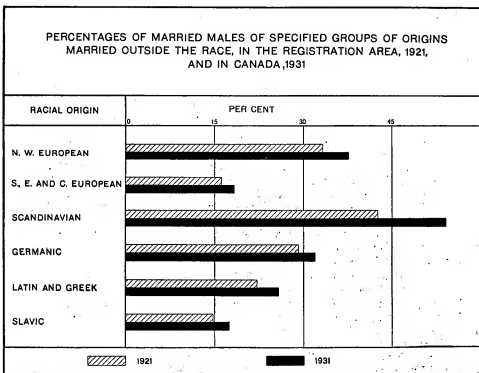


FIG. 7. Marked differences still exist as between the several racial origins in the progress of assimilation by intermarriage. The most potent deterrent to intermarriage generally is segregation. For all groups, and more particularly the Scandinavians, intermarriage increased over the decade. (The above chart is based on the parentage of children born in Canada in 1931, and in the Registration Area in 1921.)

second with 32 and 33 p.c. Only 25.9 p.c. of the men of Latin and Greek origin had crossed the racial line in marriage and 11.8 p.c. of the women; for the Slavs the figures were 17.6 and 19.4 p.c. respectively. The progress of intermarriage has thus proceeded much further with the Scandinavian and Germanic origins than with the Slavic and Latin and Greek. Many stocks have scarcely intermarried at all (see Fig. 7).

During the decade 1921-31, intermarriage increased appreciably for both geographical groups of origins, the increase being more marked for the North Western European males and the South, Eastern and Central European females. Increases were greatest in the case of the Scandinavians (both sexes) and by a wide margin.

Even greater differences appear in the progress of assimilation by intermarriage with the basic stocks of the country. The proportion of North Western Europeans who had married Anglo-Saxons by 1931 was five times larger than that of the South, Eastern and Central Europeans. Scandinavian males had married with the British ten times more than had males of Slavic origin, the Germanic peoples seven times and the Latin and Greeks three times more. Some 32.3 p.c. of the Scandinavian married males had married British wives as against 3.0 p.c. for the Slavs. The disparity was about the same for the females (see Fig. 8).

Much smaller proportions of alien stocks had married French at that date partly because the French are as yet less numerous than the Anglo-Saxons in Canada and partly because of their concentration in the province of Quebec, which has received a relatively small infusion of immigrant stocks from abroad. Save for the Italian and Greek males the North Western Europeans have also married more with the French than have persons of other European extractions. The Latin and Greek males have intermarried to a far greater extent with the French (and British) than have the females of those origins.

Speaking generally, assimilation by intermarriage with the British and French has made some progress among most of the North Western European peoples but it has scarcely begun with those of the South, Eastern and Central parts of the continent.

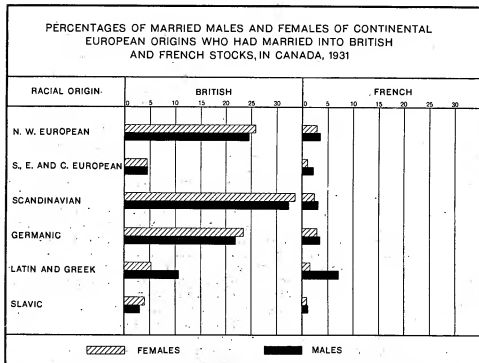


FIG. 8. Even greater differences appear in the proportions of the various stocks married to Anglo-Saxons and to French. Religion and length of North American residence are of dominant importance in explaining the recorded differences in the proportions of cross-marriages with the British. The same is presumably true in the case of the French. (The above chart is based on the percentage of children born in Canada in 1931.)

When the amount of intermarriage for the various stocks is correlated with length of North American residence, surplus males, size of the group, the index of segregation and the percentage urban, it is found that these five independent variables account for approximately 70 p.c. of the differences in the proportions of the several non-British and non-French stocks who had intermarried by 1931. Segregation was found to be the greatest single barrier to this type of assimilation with both the males and females; with the former its weight almost equalled that of the other four variables combined, with the latter it actually exceeded their combined influence. Long residence, small numerical strength and a large percentage urban favour intermarriage on the part of males. Their relative importance is in descending order, length of residence ranking next to segregation and urban residence fourth. In the case of males, differences in sex distribution have practically no effect on the amount of intermarriage. With the females the order is somewhat different. After segregation comes surplus males, then size of group, then percentage urban; length of residence has practically no influence. In view of the shortage of marriageable females of the same race, urban residence by facilitating social and business contacts with women of other origins promotes intermarriage on the part of males; with the females of alien stocks urban residence increases in-marriages by increasing the chance of finding a suitable mate of the same origin. A large surplus of males acts in the same manner. Except in the case of intermarriage with the British (and probably with the French) long residence on this continent has practically no influence on the proportion of females marrying out. If an acceptable husband of the same race is not forthcoming, there are always plenty of recent arrivals of allied stocks wanting wives.

The correlation shows that variations in the amount of intermarriage are to a very considerable extent racial in the widest sense of the term. Segregation, the dominant factor in the equation, is in no small degree a racial characteristic and so to a lesser extent are all the other variables except length of North American residence. Besides, the psychological, physiological, social, religious and occupational factors in terms of which the residual differences of 30 p.c. must be explained, are, in some measure, associated with racial derivation. And if such evidence is not conclusive there remains the fact that, after making allowance for differences in the five characteristics included in the equations, in the case of the North Western Europeans the actual amounts of intermarriage far exceeded expectation while with the majority of the South, Eastern and Central European origins it materially fell short of it. The former stocks have not only intermarried more, but they are more assimilable than the latter origins.

What is true, in general, applies with greater force to intermarriage with the basic stocks of the country, particularly the British. Of the males of North Western European extraction who had married out by 1931, 64.8 p.c. had married Anglo-Saxons; with the South, Eastern and Central Europeans the proportion was only 24.4. The former figure is well over two and a half times the latter. The proportion for the Germanic peoples was 68.1 p.c., for the Scandinavians 59.6 p.c., for the Latins and Greeks 41.4 p.c. and for the Slavs only 17.1 p.c. The figures for the females are very similar except that all along the line they appear to show a somewhat more marked preference for Anglo-Saxon husbands than do the corresponding males for Anglo-Saxon wives. The situation is of course reversed as between the sexes if one thinks in terms of the Anglo-Saxons showing the preference (see Fig. 9).

Correlation shows that of all factors making for intermarriage with the British, religious affinity is the most important. Its relative importance parallels that of the absence of segregation in intermarriage generally. Religion has more weight than length of North American residence and the size and sex distribution of the various groups combined in explaining differences in the proportions married to Anglo-Saxons. Of the latter three variables, length of residence is dominant. The four factors combined account for 68 p.c. of the differences in the proportions of the males of the several origins married to Anglo-Saxons and for 71 p.c. in the case of the females.

Of these factors, religion is intimately associated with the cultural background of the several racial origins and as was intimated above, sex distribution is to some extent related to race. Yet when the actual is expressed as a percentage of the expected rates derived from the appropriate prediction equations, it is found that intermarriage with the British exceeded expectation by 50 to 52 p.c. for the average North Western European race and fell short of expectation by 20 to 26 p.c. for the average South, Eastern and Central European race. This contrast in behaviour must find explanation in terms of residual factors which are also largely racial in character.

Further analysis of the correlation indicates that the difference in the relative assimilability is under- rather than over-stated by the above figures.

In the matter of relative assimilability with the French, the Latins and Greeks rank first, Germanic peoples a poor second, and the Slavs and Scandinavians last. In view of the heavy concentration of the French in one province, the explanation of these differences must be sought in the geographical distribution of settlement as well as in the attributes used in measuring assimilability with the Anglo-Saxons.

Origins that marry least with the British and French when marrying out tend to marry more with geographically and linguistically allied stocks.

The general conclusion is that not only the amount of intermarriage in general but that with the British and French in particular is largely a racial matter using the term in its broad connotation. With some foreign origins intermarriage has proceeded far and is proceeding rapidly; with others it has hardly begun and it is with those races that its progress is slowest. Whether the fault, if there be a fault, is on the part of the British and French or the alien stock makes no difference. The result is the same so far as Canada's population structure is concerned

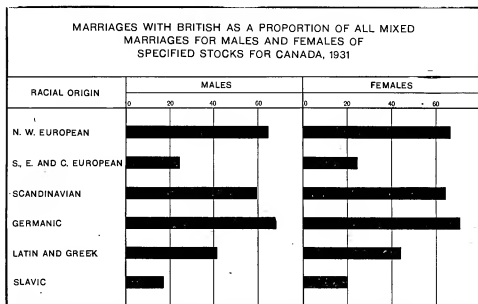


FIG. 9. The above chart gives a crude measure of relative assimilability with the Anglo-Saxons under conditions obtaining prior to 1931. The proportion of females marrying out who marry Anglo-Saxons exceeds that of the males for all linguistic groups. (The chart is based on the percentage of children born in Canada in 1931.)

NATURALIZATION

Naturalization is one step in assimilation. Like intermarriage it has a twofold aspect. In the first place, it is a measure of the progress of the assimilative process; in the second, it is an indication of the permanency of the interest of the foreign immigrant in the adopted country. Great differences appear both in the extent to which immigrants have naturalized as well as in their predisposition to do so.

To illustrate the first point, some 91.1 p.c. of the foreign-born Icelanders had become naturalized by 1931 while the proportion for the Chinese was only 7.0 p.c. At the date of the last census, 60.5 p.c. of the resident immigrants from Latin and Greek countries had naturalized; 51.1 p.c. from Scandinavian; 48.9 p.c. from Slavic, and 46.1 p.c. from Germanic. Such generalizations, however, do not adequately depict the situation. Wide disparities exist within both the linguistic and geographical groups which should be studied in detail.

The resumption of immigration appears to have been the principal cause of a drop in the proportion of foreign immigrants naturalized from 57.8 p.c. to 54.8 p.c. over the post-War

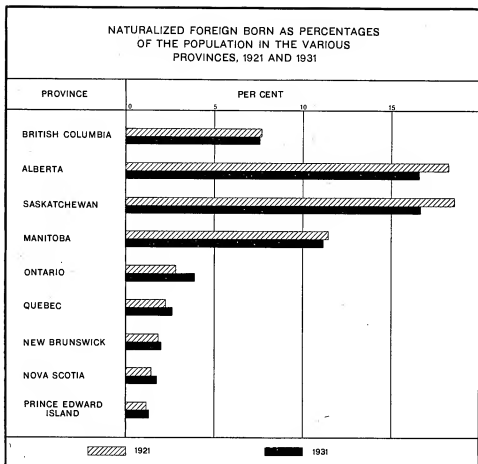


FIG. 10. This chart emphasizes not only the unequal distribution of foreign immigration as between the different sections of Canada but the unequal distribution of foreign-born citizens. Were allowance made for the preponderance of adults among persons of alien birth it would be found that the proportions which the votes of naturalized aliens constitute of the total votes would be considerably higher all around. The percentages on which the present chart is based do not include the Canadian-born descendants of immigrants. As compared with 1921, the naturalized aliens in 1931 constituted a somewhat smaller percentage of the total population in the West, and a somewhat larger percentage in the East.

decade. A marked association appears between the change in the percentage naturalized and the percentage increase in the number of resident immigrants from the twenty-six principal countries of birth indicating that for the immigrants as a whole length of residence exerts an extremely important influence on naturalization.

A comparison of the percentages naturalized by date of arrival shows that of the post-War immigrants, the Latin and Greek and Slavic groups had higher percentages naturalized than either the Germanic or Scandinavian. The reverse was true of pre-War resident immigrants.

By 1931 naturalization had proceeded only between a quarter and a third as far in cities of 30,000 and over as in the country at large. These figures apply to the foreign born as a whole; similar spreads existed for the individual countries of birth; in some cases they were larger, in others smaller, but they were consistently in the same direction. During the decade, the decrease in the proportion naturalized in large cities was much more drastic than for the population as a whole—from 49.5 p.c. for cities of 25,000 and over in 1921 to 15.5 p.c. for cities of 30,000 and over in 1931; i.e., a drop of 34 p.c. as compared with a decline of only 3 p.c. for the country at large. These differences reflect, among other things, the increasingly urban nature of the post-War immigration and the extent to which the larger cities serve as distributing centres for new immigration.

For the foreign born as a whole and for every country of birth except Iceland and Syria a larger proportion of females than of males have become Canadian citizens. Married immigrants with homes and families are ordinarily more permanent settlers and normally should show higher percentages naturalized.

When the proportion of immigrants naturalized was correlated with average length of Canadian residence, percentage urban and percentage surplus of males, it was found that these three independent variables accounted for nearly three-quarters of the differences between the various nativities. Long residence was positively related to naturalization and was nearly twice as important in the prediction as were the other two variables combined. Obviously it is the greatest single cause of differences in the progress of naturalization as between the various immigrant groups. A large surplus of males argues a large unattached floating population and was found to be unfavourable to naturalization. Contrary to expectation, *when the other variables are held constant, i.e.,* when their disturbing influence is eliminated, a large percentage urban is discovered to be associated, not with a low, but with a high proportion naturalized. This does not necessarily mean that urban residence *per se* is favourable to naturalization; the positive association may have resulted from an unusually large migration of older rural settlers to the city, the speeding up of naturalization on the part of urban immigrants with the necessary residence qualifications in order to qualify for urban relief and avoid possible deportation, and the inclusion in immigration to rural parts of larger numbers of unattached farm labourers and fewer permanent settlers than formerly. The question as to whether rural or urban residence in itself was more favourable to naturalization during the last decade is still unsettled.

In 1931, the naturalized foreign born formed a three times larger proportion of the population in Manitoba than in Ontario, and in Saskatchewan and Alberta the proportions were over four times larger. The naturalized foreign born do not constitute so large a percentage of the population in British Columbia as on the Prairies, yet the figure for even that province was several times greater than that found in any province east of the Great Lakes (see Fig. 10). When certain sections of a country have abnormally large concentrations of foreign-born citizens (and their descendants) accustomed to different systems of government and with different social and cultural backgrounds, differences in social and political attitudes can not fail to be greater than would otherwise be the case. A population with a mixed political and cultural derivation is likely to be less inhibited by tradition, less fixed in its loyalties and more prone to political and social experimentation than a homogeneous population with a common cultural heritage.

LANGUAGE

Only 2.4 p.c. of persons 10 years of age and over of foreign North Western European extraction were unable to speak either French or English in 1931 while 13.0 p.c. of the South, Eastern and Central Europeans were unable to do so. The percentages for the linguistic groups were: Scandinavian 1.5, German 2.8, Latin and Greek 6.3, and Slavic 13.8; considerable variation occurs within the geographical and linguistic groups and considerable overlapping. The figures merely indicate in summary form the progress that still is to be made before all residents of Canada use one or other of the basic languages of the country.

Except for a few individual origins like the Finnish, the Hungarian and the Yugoslavic which received relatively large additions through immigration during the decade, the proportions were generally lower in 1931 than in 1921. The decline was very much more marked with the Latin and Greek and Slavic groups than with the Scandinavian and Germanic. The former, of course, had much further to go. Only negligible proportions of the North Western Europeans were unable to speak either French or English at either date (see Fig. 11).

Some 40.2 p.c. of the foreign North Western European origins spoke English and 1.1 p.c. spoke French as mother tongue in 1931. Corresponding figures for the South, Eastern and Central Europeans were 5.0 p.c. and 0.4 p.c., respectively. The proportion giving one or other of the official languages as mother tongue was highest for the Germanic group (particularly the Dutch). The Scandinavians came next, the Latins and Greeks a low third and the Slavs last. For all groups but the Germanic, the percentages were higher in 1931 than in 1921. The differences are associated with length of residence, intermarriage and a number of other factors.

The extent to which the languages of Canada are acquired by origins speaking other mother tongues is partly a matter of extraneous circumstances and partly a matter of stock.

The percentage of children 10-20 years of age was found to be the largest single factor in promoting the learning of English which implies that the school and the associations that go with it are the most potent social agencies in this phase of assimilation. Segregation is a powerful impediment to linguistic assimilation. The more cosmopolitan commercial life of urban centres, on the other hand, favours it. As in the case of illiteracy and intermarriage (particularly with the British) there appears to be a real distinction between the behaviour of the North Western and the South, Eastern and Central Europeans and more especially between the Scandinavians and the Slavs. Apart altogether from differences attributable to age distribution, segregation, percentage urban and length of North American residence, which combined account for 62 p.c. of the variation, the former show appreciably greater proportions learning English than do the latter.

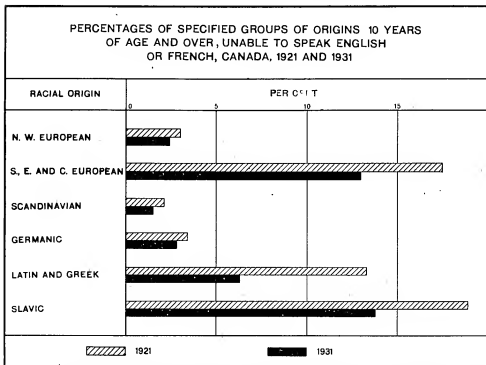


FIG. 11. Inability to speak either of the official languages of the country is confined largely to immigrants of Slavic and Latin and Greek origin, although some settlers of Germanic and Scandinavian extraction are still unable to do so. The school and the contacts associated therewith is the greatest single agency for promoting the use of English and French among immigrants. Inability to speak either language is more marked among females than among males and presumably among adults than children.

ILLITERACY

Mere inability to read and write is not in itself a circumstance of major significance. Rather is it the fact that the social behaviour of illiterates as a class is in many respects inferior to that of the literate elements of the population and, in some respects, anti-social.

Illiteracy has declined in Canada from 13.8 p.c. of the population 10 years and over in 1891, to 4.5 p.c. in 1921 and 3.4 p.c. in 1931. Illiteracy is being reduced by (a) death which is gradually eliminating it from the older ages in which it is heaviest, and (b) the school which is achieving a more or less irreducible minimum at the younger ages.

"Illiteracy imported from abroad is the greatest single element in the illiteracy of Canada." In 1931 illiteracy in Canada among the foreign-born males was 2.4 times greater than among the British-born males and among the females it was 5.3 times greater. For all but a very few races illiteracy among the Canadian born is absolutely quite small.

The proportion illiterate in the different racial origins varies from 37.62 p.c. for the Indian and Eskimo to 0.4 p.c. for the "Other British." The Ukrainian origin with 13.94 p.c.

had the highest figure of any European people. The relative proportions in the geographical and linguistic groups of origins are shown in Fig. 12. The reason for illiteracy among the foreign races is primarily, as has been said, because of foreign birth and as such it is largely a matter of group heredity.

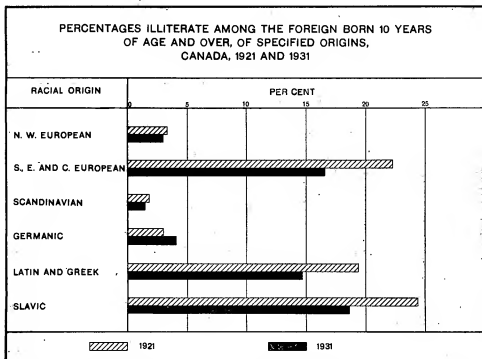


FIG. 12. Illiteracy is many times more prevalent among the South, Eastern and Central European immigrants than among the North Western European, and among the Slavic and Latin and Greek than the Germanic and Scandinavian. Immigration is the chief source of illiteracy in Canada. It is now confined largely to the upper age categories. Its real significance lies not so much in the mere inability to read and write but in the inferior social behaviour associated with the lack of this ability. The main agencies for its elimination are (1) death and (2) the school.

Under present conditions in Canada there is a decided connection between the illiteracy of a community and the school attendance of children 7 to 14 years of age. In communities where the amount of illiteracy is marked, there is a tendency to fail to provide accommodation for the children or to fail to send them to school when accommodation has been provided. An illiterate community thus tends to remain illiterate. Illiteracy and school attendance are largely functions of nativity and race.

CRIME

Indictable Offences.—In 1931, the number of convictions for indictable offences per 100,000 Canadian-born population was 226; the figure for the British born was 279 and that for the foreign born 426. These figures localize the problem of law enforcement as it actually existed in that year. When corrections are made for age and sex distribution the relative incidence of convictions for the three nativities was 100 to 148 to 184. The conclusion, obviously, is that in so far as convictions for indictable offences in 1931 are an index of criminality, disregard for the law was 48 p.c. more prevalent among the British born and 84 p.c. more prevalent among the foreign born after all due allowance is made for differences in the extraneous circumstances of age and sex (see Fig. 13). Conviction rates for the total population have drastically increased over the decade, notably for males between 16 and 39 years of age.

Reformatory Data.—For reasons set forth in the body of the monograph great care must be exercised in avoiding unwarranted conclusions from data on reformatories. The findings in this section are not adapted to summarization because of the constant necessity for elaborate

qualifications. The interested reader is, therefore, referred directly to the part of Chapter XI dealing with this subject.

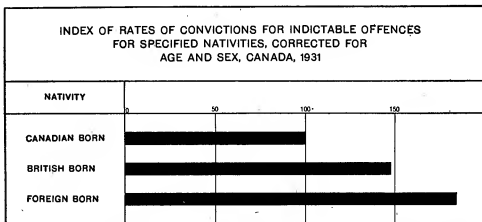


FIG. 13. The above chart indicates that even after corrections are made for differences in age and sex distribution, conviction rates for indictable offences are considerably higher for the British born and materially higher for the foreign born than for native Canadians. Relatively few of the immigrants convicted of indictable offences, however, are committed to penitentiaries, indicating that, on the average, the offences are of a somewhat less serious character.

Penitentiary Data.—In 1931, the number of Canadian-born males per 100,000 15 years and over, in penitentiaries was 62; that for the British-born 70 and for the foreign-born 108. These figures indicate that under existing age distributions, the actual problem of law enforcement as reflected by penitentiary commitments for major offences is still substantially greater in proportion to their numbers among the foreign-born males than among the British- or Canadian-born.

The decade has witnessed a rather remarkable change in the specific rates at different ages. For the Canadian born they were materially higher in 1931 than in 1921 at all ages between 20 and 55, and for the British born at ages between 20 and 40. With the foreign born the rates were lower for six of the ten age categories shown in the tabulations and for the early adult ages they were materially lower—lower even than those for the Canadian born. The increase for the British and Canadian born is doubtless in some measure related to the increase in convictions for indictable offences associated with the financial debacle of 1929. To this should be added, in the case of the Canadian born, the abnormal increase in the number of Canadian-born sons of immigrants in the early years of adult manhood resulting from the heavy immigration during the years preceding the War, and as well, the circumstances that in 1931 the young adults of Canadian-born parentage were the children of the War period who suffered from lack of paternal control. The latter would also apply to the British. The decline in the rates for the foreign born is more difficult to explain. Greater care in the selection of post-War immigrants may have had something to do with it together with the increased fear of deportation.

The net result of these changes seems to have been that, on the whole, the British born now show somewhat smaller percentages in penitentiaries, age for age, than do the Canadian born and that while the rates for the foreign born are generally higher, they are lower for the important age groups between 20 and 34. These findings are in curious contrast with those on indictable offences. Taken together they seem to imply that while much larger numbers of British and foreign born are convicted for indictable offences, relatively fewer of the convictions result in penitentiary sentences.

The incidence of penitentiary commitments differs greatly as between the individual foreign nativities. The number of males from both Russia and Poland in Canadian penitentiaries exceeded the number from all countries in North Western Europe combined. The total for the Chinese was only fractionally smaller. Italy and Austria accounted for almost twice the number attributable to either the Scandinavian or Germanic group.

Over 80 p.c. of the European-born males in Canadian penitentiaries on June 1, 1931, came from south, eastern and central parts of the continent; Slavic countries contributed 56 p.c.

of the total European, Latin and Greek 20 p.c., Scandinavian and Germanic countries each 7 p.c. The United States is responsible for a slightly larger number of male penitentiary population than are Slavic countries combined and three times more than all North Western European countries. Rates per 100,000 are shown in Fig. 14.

A comparison of the rates at the beginning and the close of the decade reveals a very real and significant improvement in respect to penitentiary commitments among the immigrant male population. This improvement was most marked in the nativity groups with excessively high rates in 1921. The only case where there was an important *bona fide* increase was that of the Chinese.

The relationship between citizenship and criminality is briefly summarized as follows: out of 696 foreign-born inmates of Canadian penitentiaries in 1931, 455 or 65.3 p.c. were aliens. The rate for the naturalized per 100,000 was 44, that for the aliens 109. The alien foreign born still constitute our major problem in respect to serious criminal offences among immigrants in Canada. Nevertheless the rate for this class of immigrants declined from 179 to 109 over the decade, while that for the naturalized rose from 20 to 44. The evidence of penitentiary records points to increasing criminality among the naturalized and decreasing criminality among the alien foreign born.

There is also marked variation in the proportion of individual stocks in penitentiaries. As in 1921 the rates for the Scandinavian and Germanic peoples are still very low as compared with those for the Slavs and particularly the Latins and Greeks. A comparison of the figures at the two census dates, however, seems to indicate that the basic Anglo-Saxon and French stocks as well as the other North Western European, i.e., the stocks with relatively low rates, have been becoming more criminal, while the South, Eastern and Central European stocks which have been and still are prominently represented in the penitentiary population have been becoming much less so.

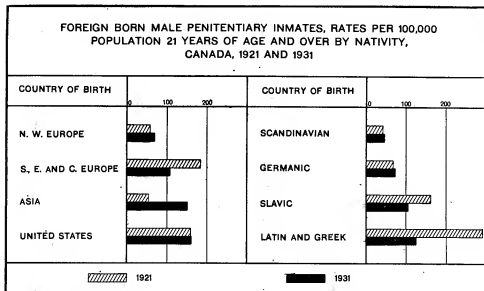


Fig. 14. This figure shows the incidence of serious crime as between the different nativity groups. It indicates the sections of the community in which the actual problem of law enforcement is more or less serious. A considerable portion of the differences are attributable, of course, to variation in age and sex distribution and other extraneous circumstances. The close of the inter-censal decade was marked by radically higher rates for the Asiatics, slightly higher for the North Western Europeans, stationary rates for the United States born and radically lower rates for the Slavic and Latin and Greek groups. These changes are also in some measure the result of changes in age and sex distribution.

Owing to an apparent lack of correspondence between the data for individual origins as recorded by the institutions concerned and the classification followed by the census enumerator in collecting statistics for the population as a whole, it is impossible satisfactorily to free the figures from the influence of such extraneous factors as age, sex, rural-urban distribution and length of

residence and determine differences in racial propensity to crime. Since the confusion in classification appears to be confined to the Slavic races, there are no grounds for questioning the reliability of the rates for groups of origins or for other European stocks where the sample is sufficiently large to yield reliable results. Further analysis of the figures for individual races, however, must await more satisfactory racial origin records of penitentiary inmates.

The obvious defects in penitentiary records for individual racial origins are largely eliminated when the data are combined into geographical and linguistic groups. When corrected for differences in age and sex distribution, the penitentiary rate per 100,000 .15 years and over was 66 for the South, Eastern and Central European origins as against 37 for the North Western European. The Latins and Greeks ranked highest among the linguistic groups with a figure of 118; the Slavs came second with 64; then followed the French, British and Germanic origins in the order named; the Scandinavians were the lowest with a rate of only 29.

OCCUPATIONS AND UNEMPLOYMENT

The Gainfully Occupied.—Persons reporting gainful occupations include both persons who had employment and were unemployed at the date of the last census.

For the total population of all nativities and for each of the broad nativity groups except the British Isles, females constituted a larger proportion of the population with gainful occupations in 1931 than in 1921.

While the number of *males* of Canadian birth reporting gainful occupations in 1931 represented only 85.4 p.c. of the total Canadian-born male population 15 years of age and over, the proportions of the British and foreign born were 92.0 and 93.5 p.c. respectively. With the *females* the situation was reversed, relatively more Canadian than British and foreign born having gainful occupations. Differences in age distribution account for almost the whole of the variation as between the nativities for the males, but fall far short of doing so for the females (see Fig. 15).

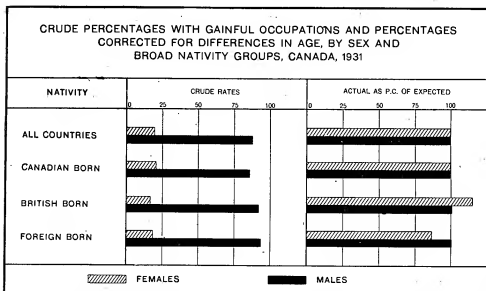


Fig. 15. The above chart is based on data for the population 10 years of age and over. Differences in age account for practically all of the recorded differences between the nativities in the percentages of males with gainful occupations. The same does not apply in the case of the *females*: the British born seek gainful employment much more generally than the Canadian born, and the foreign born much less.

In 1921, the percentages of British- and foreign-born males with gainful occupations exceeded that for the Canadian-born by amounts greater than could be accounted for by their more favourable age distribution; by 1931 the situation had been corrected, at least temporarily, to the advantage of the Canadian born and to the disadvantage of the other nativities. The

proportions of females with gainful occupations increased over the decade despite, on the whole, slightly less favourable age distribution at its close. When the influence of age is eliminated, the increase is several times greater in the case of the foreign born than with either the Canadian or British born, but age for age, employment is still less general in the former group. Reasons for these changes and their significance are discussed at length in the text.

Speaking relatively, male immigrants from the British Possessions and British Isles avoid agriculture and engage in manufacturing, mining, transportation and construction to a much greater extent than do the Canadian born. The United States born show the largest percentage of all nativities in agriculture. The proportion of the European born engaged in agriculture is approximately the same as that for the Canadian born, and their distribution among the other industries does not differ radically from that of the native population. That, of course, does not apply to the immigrants from all individual European countries. Only 13 p.c. of the Asiatics are in agricultural industries but 43 p.c. are in domestic and personal service. Most of the other Asiatics are found in logging, fishing, trapping, in the wood and paper manufacturing industries and working as common labourers. The latter group accounts for 21 p.c. (see Fig. 16).

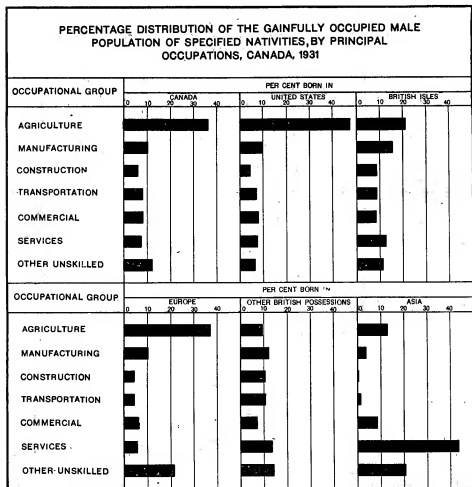


FIG. 16. A vertical reading of the foregoing figure indicates that some 36 p.c. of the Canadian-born male population with gainful occupations were in agriculture, 10 p.c. in manufacturing, 5 p.c. in construction, 5 p.c. in transportation and so on. A horizontal reading indicates that 36 p.c. of the Canadian born were in agriculture as compared with 48 p.c. of the United States born, 37 p.c. of the European born and 13 p.c. of the Asiatics. The figure is based on data covering all males reporting gainful occupations whether actually employed at the date of the last census or not.

Almost 51 p.c. of all Canadian-born *women* with gainful occupations appear in the service group, 20 p.c. being in professional occupations and 30 p.c. in domestic and personal service. The women of Continental European birth show the largest percentage in domestic and personal service, those from Asia and British Possessions tie for second place, the United States born come third and the Canadian born last. The United States born rank first, the Canadian born second in the proportion in the professions and the British Possessions come third. Clerical occupations are second in importance for females of all nativities except the Continental Europeans and the Asiatics where commerce is important. In general, the bulk of immigrant women with gainful occupations are in the service group, especially domestic and personal; considerable proportions are in clerical and manufacturing, notably the textile industries, and of the balance, the largest percentage is engaged in trade and commerce.

As between origins, occupational distribution varies radically and does not lend itself to summary statement. The subject is discussed in detail in the body of the report.

Wage-Earners.—The term "wage-earner" as used in the census includes persons receiving salaries as well as persons working for wages.

The percentage that wage-earners constitute of all persons with gainful occupations differs considerably as between the sexes and the several nativity groups. For the total population and for all nativities except the Asiatics the proportion was greater for the females than the males (see Fig. 17). European and Asiatic male immigrants show larger, and immigrants from the British Isles very much larger, proportions of wage-earners to persons with gainful occupations than do the Canadian born; immigrants from the United States show smaller proportions. With the females only the percentage for "Other British" exceeds that for the native Canadians. All others are smaller.

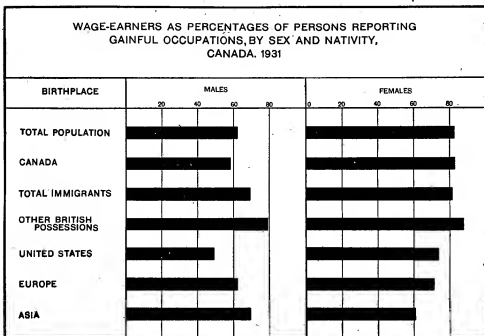


Fig. 17. More of the females than of the males reporting gainful occupations are wage-earners for every nativity except the Asiatic. Considerable variation exists as between the Canadian born and the several immigrant groups in the percentage that wage-earners constitute of the total reporting gainful occupations. This applies both to males and females. Explanations are suggested in the text.

The percentages that immigrant wage-earners constitute of all immigrants with gainful occupations are shown for specified racial origins by sex in Fig. 44, Chapter XII and merit careful perusal.

Unemployment.—Fig. 18 shows the average number of weeks lost per male wage-earner between June 1, 1930, and June 1, 1931, for the immigrant and Canadian born by province of residence. It reflects the relative incidence of unemployment during the early part of the depression as it affected wage-earners of the different nativities. Unemployment is seen to have fallen much heavier on the male immigrants than on the Canadian born. On the average, male wage-earners lost about twice as much time as females in the year under review. All rates are in terms of all wage-earners. They would have been much higher had they been in terms of only wage-earners losing time.

Distribution by racial origin shows that the South, Eastern and Central Europeans suffered most, the Scandinavian and Germanic peoples less, and the French and Anglo-Saxons least.

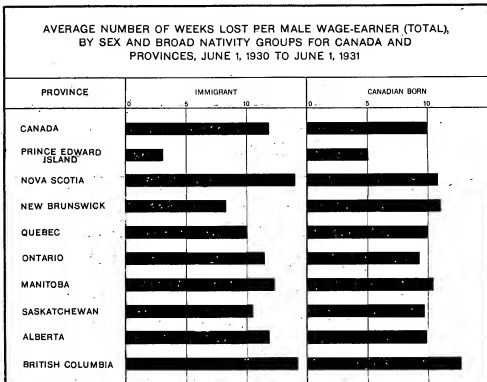


FIG. 18. In all but two provinces and in Canada as a whole immigrant male wage-earners on the average lost more time through unemployment during the twelve months preceding the census than did native Canadians. A vertical reading of the chart, particularly of the section dealing with the Canadian born, gives a rough idea of the relative severity with which the depression bore down on the wage-earners in the various sections of the Dominion during the year under review.

An attempt was made to weigh and eliminate the various influences contributing to these differences with the following results: it was found that occupational distribution, age and date of arrival combined accounted for 60 p.c. of the variability in the extent to which the different races suffered more or less heavily than the population of the province of residence. Their relative importance in the prediction descended in the order named. Occupational risk was found to be more than twice as important as the other variables combined. Immigrants suffered more, not because of recency of arrival *per se* but because they went or were forced into the more risky occupations.

For Canada as a whole, the position of the British born from the standpoint of expected steadiness of employment was on a par with that of the total wage-earning population. That of the Asiatic and United States born was much superior; that of the European born much inferior. Such was the expectation on the basis of the variables included in the equation. With the British, actual unemployment was materially less than expected, with the Asiatics, moderately less,

with the United States born moderately more and with the European born materially more. An examination of the work sheets shows that those deviations from expectation were the result of factors peculiar to the nativities and not included in the present correlation. They were quite distinct from expected differences in the basis of occupational and age distribution and date of arrival. Some suggestions as to their probable nature are made in the text among which might be mentioned the fact that during periods of economic stress, the less efficient and the single males-without dependents usually are discharged first.

FERTILITY, INFANT MORTALITY, DEAF-MUTISM AND BLINDNESS

Fertility.—On the basis of their numerical importance in the population, Anglo-Saxons contributed 22 p.c. fewer births than expected in 1931, and the French 38 p.c. more. Non-Anglo-Saxon races are contributing almost 60 p.c. of the additions to the Canadian population through birth.

Fig. 19 presents an index of fertility in terms of married women 15-44 years of age for specified groups of origins. The figure for the foreign European stocks is a fifth higher than that for the Anglo-Saxon, the figure for the Asiatic races higher by half and that for the French over twice higher. These figures can not fail to impress one with the tremendous heterogeneity of our Canadian population in the matter of fertility.

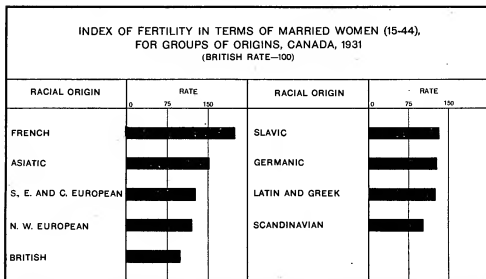


FIG. 19. So long as differences in fertility rates exist, the ethnic structure of the population changes. The above graph indicates that such changes are likely to be much more rapid than is commonly supposed. On the basis of current mortality and differential fertility rates, Anglo-Saxons and French will each constitute about 39 p.c. of the population of the Dominion in 1971 and foreign stocks about 22 p.c.

An attempt was made to determine how far these differences were the result of extraneous circumstances and how far they were racial in the broad sense. On the basis of data for seventeen origins in Ontario, Manitoba, Saskatchewan and Alberta and sixteen in British Columbia, a total sample of eighty-four, a coefficient of correlation was obtained of $R = .65 \pm .03$. This compares with a coefficient of $R = .88 \pm .05$ obtained for the Prairie Provinces as a whole in 1926. A comparison of these results indicates that differences in economic and physical environment, occupational distribution and the like are as important in explaining differences in fertility as are the five independents combined in the 1931 correlation.

This finding detracts in no way from the significance of the relationship emerging from the present correlation. The reliability of the correlation coefficient is beyond question. The five independents account for approximately 42 p.c. of the variability. Their relative importance in the prediction in descending order is age, urban residence which is unfavourable to high fertility, long North American residence which is favourable, the percentage of women married and illiteracy.

The influence of illiteracy is negligible. That of the percentage married is negative, a high percentage married being associated with a low fertility. Under the conditions obtaining at and around 1931, the races with high percentages married were those who were less affected by the depression, viz., those with large proportions in the salaried and higher economic classes. These are low-fertility groups. As in 1926, the most that can be said regarding the positive partial correlation between the percentage North American-born and fertility is that it points to a rise in the fertility of women of the first and possibly the second generation of immigrants under the stimulus of the more favourable economic conditions of their country of adoption.

A comparison of actual and expected rates derived from the prediction by provinces leads to the conclusion that environmental, occupational and other factors not included in the correlation are favourable to low fertility in Ontario, to high fertility in Saskatchewan and to fertility on an intermediate level in British Columbia.

A *bona fide* residuum of considerable proportions exists over and above that accounted for by the independent variables and environmental and occupational factors. This residuum of nearly 25 p.c. is the proportion of the variability attributable to other factors such as religion, cultural background, etc., closely associated with race. Occupation and several of the variables included in the equation, of course, are also racial to a greater or less degree.

Infant Mortality.—Infant mortality rates in Canada are high for the Indian, Negro, French and Slavic origins generally; intermediate for the Latin and Greek, and low for the Scandinavian, Germanic and Anglo-Saxon stocks.

Marked positive associations are found to exist between high infant mortality on the one hand and high fertility, high illiteracy and a large proportion rural on the other. These three independents have about equal weight in the prediction. Combined they account for 72 p.c. of the variability in infant mortality.

Deaf-Mutism.—Approximately 61.5 p.c. of deaf-mutes in Canada are reported as suffering from the infirmity from birth. Increases are reported as between 1921 and 1931. The variation in the incidence is considerable as between the different origins. It is more prevalent in the older than in the newer provinces. The reader is referred to the text for details.

Blindness.—Blindness is a function of age. It appears to be increasing in Canada—the rate rose 40 p.c. between 1921 and 1931. Its incidence is extremely heavy among the North American Indians. There appears to be appreciable variation in its incidence as between the white races in Canada. Much of the variation is associated with age differences.

INMATES OF MENTAL INSTITUTIONS

The incidence of mental illness leading to institutional care and treatment is heavier among males than among females, among the immigrants than among the Canadian born, among the Continental Europeans than among persons of British or United States birth, and among the North Western Europeans particularly the Scandinavians, than among the South, Eastern and Central Europeans (see Fig. 50, p. 744). The indicated difference in incidence between the Canadian born and foreign born as a group is entirely attributable to peculiarities of age and sex distribution. That between the Canadian and British born is more than accounted for by similar causes. It seems to follow that differences in age and sex distributions are likely to be of major importance in explaining the differing incidence as between the individual nationalities.

Persons of mixed parentage show much smaller percentages in mental institutions than do the Canadian born age for age and sex for sex. The difference is so great as hardly to be capable of explanation on the basis of any probable difference in attitude toward institutional care and treatment on the part of the two groups. While the rates for both persons of foreign- and British-born parents are somewhat lower than those for persons of Canadian-born parents, the spread is of moderate magnitude and quite possibly might be accounted for on the above grounds.

When the cross-classification is by racial origin, it is found that the proportion of the Anglo-Saxon race in mental institutions is appreciably above the all-Canada average; that for the French is slightly below. The standing of every group of foreign origins except the Scandinavian is lower than the British. That of the Germanic, Asiatic and North Western European peoples is materially below (see Fig. 20). The differences between the rates for the origin groups are smaller than those for the nativity groups, reflecting less distortion because of age and sex differences. These figures merely localize the incidence of institutional cases.

An attempt was made to eliminate the influence of age, sex, length of Canadian residence, rural-urban distribution, etc., from the data for individual origins and to determine if and to what extent racial differences in liability to mental illness or defects existed. The attempt merely succeeded in demonstrating a lack of correspondence between the racial origin data as collected by mental institutions for their inmates and those collected by the census for the population as a whole. It seems probable that the figures for the geographical and linguistic groups give a fairly accurate picture of the incidence as between these larger groupings, but the task of eliminating extraneous influences which doubtless account for a major portion of the indicated variation must await a more satisfactory racial origin record of mental institution inmates.

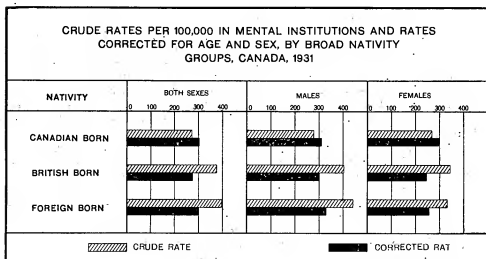


FIG. 20. The importance of age and sex in explaining the differing incidence of mental hospital commitments as between the broad nativity groups is strikingly demonstrated in the above chart. The crude rate for the British born (both sexes) was nearly 40 p.c. higher than that for the Canadian born and the crude rate for the foreign born 50 p.c. higher. When allowance is made for differences in age and sex distribution the rates for the Canadian and foreign born are practically identical and that for the British born nearly 10 p.c. lower than either.

RELIGION

The material in this chapter is largely descriptive and does not lend itself to summary statement save in the case of one or two conclusions growing out of the analysis. These are stated below.

The progress of religious assimilation of foreign races of the Protestant faith seems to vary directly with length of Canadian residence and inversely with the degree of segregation; its direction is dictated largely by considerations of geographical proximity to an acceptable place of worship. Generally speaking, in affiliating with a Canadian Protestant church the foreigner apparently fails to appreciate or recognize any important difference between the leading Protestant denominations within the country.

In the case of Roman Catholic immigrants there is no occasion for religious assimilation because of the absence of internal divisions in the Roman Catholic Church and its international scope. Immigrants of the Roman Catholic faith and their descendants continue to adhere to that faith generation after generation.

The religious like the racial distribution of new immigration as between the different sections of the Dominion has varied radically since the beginning of the century. As with racial composition, it is safe to conclude that in the absence of any large volume of immigration or emigration in the predictable future, differential fertility will bring about more rapid and more radical changes in the religious composition of the population of the Dominion than have occurred at any time since Confederation.

Summary Tables I and II are inserted for convenient reference.

TABLE I.—SUMMARY SHOWING STANDING OF THE POPULATION OF VARIOUS RACIAL ORIGINS ACCORDING TO SPECIFIED HEADINGS, CANADA, 1931

Racial Origin	Number in Canada, 1931	P.C. Canadian-Born	P.C. United States-Born	P.C. Urban	P.C. in Cities of 30,000 and over	Index of Segregation	P.C. under 10 Years of Age	P.C. Speaking English as Mother Tongue	P.C. 10 Years and over				Infant Mortality Rate (deaths per 100 born)	Mean Number of Births, 1930-1932, in Terms of Women 15-44 Years	
									Speaking English as Mother Tongue	Unable to Speak English or French	Not Speaking English as Mother Tongue but Had Acquired It	Illiterate		Births per 100 Women	Deaths per 100 Women
British—															
English.....	2,741,419	70.05	3.13	59.30	33.54	104.3	18.28	4	98.5	0.3	—	0.83	6.40	8.4	14.3
Irish.....	1,200,528	75.38	2.83	58.51	32.51	100.0	17.80	6	98.5	0.4	—	1.08	5.02	7.3	14.9
Scotch.....	1,356,321	58.22	5.88	60.59	30.62	100.0	17.60	8	91.7	0.1	—	0.83	5.32	7.6	10.6
Other.....	1,022,494	58.22	5.88	57.76	34.46	100.0	18.70	23	91.7	0.4	—	0.41	5.00	6.0	10.6
French.....	2,927,990	97.36	1.90	54.00	26.79	105.0	26.29	1	4.5	85.3	—	6.18	11.39	14.3	29.3
Scandinavian—															
Swedish.....	34,118	37.45	11.37	39.33	22.61	110.0	19.62	56	29.7	0.2	1.2	1.15	5.42	9.7	16.2
Norwegian.....	10,382	65.44	5.23	41.40	22.97	156.0	19.54	4	14.3	—	3.0	0.66	6.63	8.8	—
Other.....	93,243	42.08	23.01	27.23	10.65	188.0	20.40	35	25.3	0.2	1.3	1.10	4.91	10.4	—
Germanic—															
Dutch.....	148,963	79.89	6.43	33.95	13.42	188.7	22.51	10	67.1	0.1	3.9	2.02	5.54	7.9	13.7
Belgian.....	27,685	40.58	2.45	37.08	18.21	250.9	22.03	19	10.1	25.4	1.4	0.90	5.58	9.6	14.1
Other.....	473,544	69.46	9.50	36.94	17.39	175.7	22.22	10	41.2	0.5	2.5	2.67	6.30	11.7	30.0
Latin and Greek—															
Italian.....	98,173	63.11	2.12	31.55	51.67	808.7	26.09	28	7.7	2.1	5.4	89.9	9.14	13.9	—
Romanian.....	39,066	50.73	1.04	44.63	25.39	339.1	25.73	37	5.7	0.3	9.4	90.8	13.68	10.1	14.7
Slavic—															
Austrian.....	43,639	53.70	2.32	37.82	17.11	220.9	23.01	196	10.1	0.3	8.2	99.5	10.50	9.9	15.5
Czech.....	30,401	27.75	4.95	31.42	11.52	113.0	18.05	11	6.5	0.8	10.6	87.5	11.67	14.9	—
Slovak.....	5,876	28.39	1.55	73.92	58.13	292.1	15.65	135	6.5	0.1	14.1	85.0	7.89	20.6	—
Lithuanian.....	145,503	47.05	1.35	46.57	28.38	307.6	22.82	29	4.3	0.1	15.7	83.1	10.79	—	—
Polish.....	88,148	54.02	3.48	27.34	13.83	283.9	26.37	20	7.5	0.2	13.8	85.0	11.75	11.4	17.5
Russian.....	16,174	20.01	1.48	55.49	28.63	201.1	17.13	164	2.5	—	14.1	86.7	13.14	9.4	15.3
Yugoslavian.....	225,113	56.99	0.32	29.53	16.88	540.0	25.22	20	1.8	—	15.3	84.4	10.48	21.2	—
Other European—															
Finnish.....	43,885	28.17	3.40	45.80	18.04	617.4	13.08	36	3.7	0.1	17.7	81.6	6.76	7.3	12.3
Hebrew.....	196,726	47.84	2.77	99.45	32.77	835.7	10.91	2	1.9	—	17.2	86.3	4.74	4.9	—
Hungarian.....	40,352	27.94	1.58	49.47	30.36	494.4	21.45	62	2.7	0.1	17.2	82.2	9.78	16.7	20.5
Asiatic—															
Chinese.....	46,519	11.09	0.03	82.79	56.10	1	5.76	1,141	0.5	—	29.5	70.4	17.40	7.35	18.0
Japanese.....	23,342	48.46	0.12	46.98	38.30	—	29.11	145	0.5	—	21.6	78.5	11.20	5.93	18.0
Other.....	14,687	51.77	1.85	79.40	38.30	—	26.31	30	10.5	2.2	5.4	86.8	13.23	7.84	—
Other—															
Indian.....	122,911	99.20	0.59	4.11	1.07	845.5	28.97	5	6.2	1.0	31.0	64.7	15.81	14.8	—
Negro.....	19,456	79.80	11.36	60.82	35.00	—	22.29	10	90.0	0.6	—	8.13	11.47	9.7	—

* Asiatics are omitted for the reason that an index of segregation for the group is apt to be misleading.

* Less than one-tenth of one per cent.

TABLE II.—SUMMARY SHOWING STANDING OF SPECIFIED RACIAL ORIGIN GROUPS ACCORDING TO SPECIFIED HEADINGS, CANADA, 1931

Racial Origin Group	Number in Canada, 1931	P.C. Canadian- Born	P.C. United States- Born	P.C. under 10 Years of Age	P.C. Surplus Males	P.C. 10 Years and over				Infant Mortality Rate (deaths per 100 born)	Rates per 100,000 .05 years and over (in Part) tentative Corrected for Age and Sex
						Speaking English as Mother Tongue	Speaking French as Mother Tongue	Unable to Speak English or French	Not Speaking English as Mother Tongue but Have Acquired It		
British.....	5,351,071	74.35	3.24	18.15	5	98.6	0.5	*	85.7	0.38	47
French.....	2,927,090	97.36	1.90	26.29	1	4.5	95.3	*	47.0	6.18	58
Other North Western European.....	878,140	63.60	10.53	21.57	17	40.2	1.1	2.4	95.0	3.02	37
South, Eastern and Central European.....	784,154	48.39	1.66	23.66	32	5.0	0.4	13.0	87.4	16.61	66
Scandinavian.....	228,049	43.56	16.26	19.54	38	24.6	0.2	1.5	97.7	1.44	29
Germanic.....	650,091	70.43	8.52	22.28	10	45.8	1.5	2.8	91.3	4.11	39
Latin and Greek.....	136,673	51.90	1.87	26.69	33	7.6	1.6	6.3	91.1	14.72	118
Slavic.....	563,014	50.60	1.48	23.91	29	4.6	0.1	13.8	85.9	18.70	64
Asiatic.....	84,546	28.75	0.38	15.60	236	2.0	0.4	23.9	73.3	15.32	-

* Dutch and German.

* Less than one-tenth of one per cent.

PART I

INTRODUCTION

Sources of Data.—The analysis in the present monograph is based for the most part on census materials collected in 1931 and at previous ten-year intervals. The Census of Canada cross-classifies the various nativity and racial groups in our population according to a great and increasing number of attributes so that it is possible to determine directly from census materials not only their spatial and rural-urban distribution but such attributes as age, sex, conjugal condition, length of Canadian residence, literacy, language spoken, citizenship, criminal record, religious and occupational distribution, fertility, etc. These sources are supplemented by the Vital Statistics Reports which are assembled under the direction of the Dominion Bureau of Statistics and are so arranged as to correlate with the census tabulations. The Vital Statistics Reports provide basic data for the study of intermarriage, infant mortality and certain aspects of the problem of fertility and natural increase. A third source of material is the periodic report covering such subjects as mental institutions. This report when related to appropriate census figures served as the basis for the discussion of the relation of birthplace and racial origin to the incidence of mental illness. Where use was made of other official statistics, care has been taken to indicate the source in each case. A copy of the pertinent sections of the official questionnaire used in the last census appears in the Appendix at the end of the present monograph.

General Objectives and Definitions.—The general purpose of this study is to discover the characteristic distributions of the several nativity and racial origin elements which go to make up the Canadian population, to determine wherein the behaviour of each resembles and wherein it differs from that of the basic Anglo-Saxon and French stocks, to investigate the reasons for such differences in behaviour and to measure, in so far as that is possible, the progress of assimilation up to the date of the 1931 Census and particularly during the last inter-censal decade. It might be well, therefore, before proceeding further to define exactly what is meant by nativity and racial origin. Nativity refers to a province (if in Canada) or country of birth. The connotation of the term is quite clear and simple but when one comes to make use of the statistics one encounters certain practical difficulties. These difficulties originate, for the most part, out of the drastic changes in national frontiers brought about by the Treaty of Versailles. They will be discussed in Chapter II and as occasion demands elsewhere throughout the monograph. The meaning of the term, however, presents no problem and requires no further elaboration here. Unfortunately the same can not be said of the term "racial origin" as used in the Canadian Census and in this report, and the three subsequent sections are devoted to an explanation of its meaning, a discussion of some of the difficulties encountered in collecting and tabulating information pertaining thereto, the presentation of a corrected origin tabulation for 1931 and a brief comment regarding the importance and significance of racial origin records to a new and growing nation like that within the confines of the Dominion of Canada.

Use of the Term "Racial Origin".—In a strictly biological sense, the term "race" signifies a subgroup of the human species related by ties of physical kinship. Scientists have attempted to divide and subdivide the human species into groups on the basis of biological traits, such as shape of the head, stature, colour of skin, etc., and to such groups and to such only, would the biologist apply the term "race". The use of the term, however, even in this strictly scientific sense is neither definite nor free from confusion, for there is no universally accepted classification. Furthermore, the identification of certain types of culture with definite biological types has led inevitably to the result that, even in the hands of the ethnologist, the term "race" has acquired a cultural as well as a biological implication.

Most modern national groups are composed of widely varying racial strains. The English type, if such exists in the biological sense, is the product of the commingling of perhaps half a dozen primitive stocks. The same applies to the French, Italian and indeed to any European group. Whether these peoples, during the past thousand years, have evolved distinct and homogeneous biological types which could appropriately be termed "races" is a matter for debate. Homogeneity is always relative; so with race differentiation. The technical biological question as such, however, is of minor importance as far as the census is concerned. Even in such cases as Scottish and Irish, where it is well known that distinct strains exist, the cultural consideration is predominant.

The significant fact in the present connection is this: the combined biological and cultural effect on Canada of the infiltration of a group of English is clearly different from that produced by the addition of a similar number of, say, Ukrainians. Admittedly, the difference is partly a biological and partly a cultural matter, yet it would be futile from a practical point of view to attempt to separate the two influences. The relative importance of the biological and the cultural is not subject to quantitative measurement. Both, however, are important and both are included in the term "racial origin".

The term "racial origin", therefore, as used by the census, has a combined biological and cultural significance. It also usually has a definite geographical association. It suggests whence our people come as well as their biological and cultural background. One merely follows popular usage in employing the terms, "English stock", "French stock", "Italian stock", etc., both to suggest original geographical habitat and to describe the sum total of the biological and cultural characteristics which distinguish such groups from others. Such usage is familiar to the public in general, and only when our "origin" classifications follow such lines can they be collected by a census, be understood by the people or have any significance from the practical standpoint of the development of a Canadian nation.

Practical Difficulties in the Origin Classification.—As has just been said the term "origin", as used here, has a combined biological, cultural and geographical significance. In certain cases all three aspects are clearly defined; in others the classification means little more than geographical origin, being distinct from nativity classification mainly in that it includes not only immigrants, but their descendants. The situation is made clear by examining the actual divisions in the racial origin tables of the census.

First, there are cases in which the biological connotation included in the term "origin" is pronounced, i.e., where the strains of the immigrating people are comparatively pure. Such are the coloured stocks, the Chinese, Japanese, Hindu, Negro and aboriginal Indians. Each also has a more or less distinctive culture. Similarly, in the case of many of the white peoples the term "origin" includes both biological and cultural elements, as in the case of the English, French, Danish, Dutch, Finnish, German, Greek, Hebrew, Icelandic, Italian, Norwegian, Swedish, Syrian and so on. With such groups no serious statistical difficulties arise. With certain other groups, however, and particularly with those originating in the central and eastern parts of Europe, the problem of classification is not so simple.

While there are certain classes like the Bulgarians, Hungarians and Czechs and Slovaks where the admixture of other races is not great, there are census groups like the Roumanians, of whom 12 p.c. spoke German as the mother tongue and 15 p.c. spoke Ukrainian, arguing a statistical (and perhaps also a biological) mixture of stocks. The lack of homogeneity is perhaps not so great with the Poles, 88 p.c. of whom spoke Slavic languages as the mother tongue and only a little under 5 p.c. of whom spoke German. The Yugoslavs are of preponderantly Slavic extraction, judging from the data on mother tongue; but further difficulties emerge with the Russian, Ukrainian and Austrian groups. Of those reported as of Russian origin 35 p.c. spoke German as the mother tongue—presumably those from the Baltic provinces of Russia—and 54 p.c. spoke one of the Slavic languages, the great majority Russian. Thus, while the majority of those classed as of Russian origin were Slavs, there was a considerable admixture of Teutonic stock. Of the Austrians, some 46 p.c. spoke German as mother tongue, and 38 p.c. one of the Slavic languages. Such a group is clearly not a biological unit. The term "Austrian" in the "origin" tables merely designates a group of immigrant people, most of whom are Germanic and Slavic, and whose homes before coming to Canada in the pre-War days had been for many generations within common political boundaries and who had therefore the common traits begotten of a similar cultural and economic environment.

The Ukrainian classification, again, includes four distinct stocks: the Bukovinian, Galician, Ruthenian and Ukrainian. But the problem here is not in the diverse elements within the group. The four peoples are separately classified and 96 p.c. of them speak Slavic languages. The group thus comprises only closely allied biological strains—a circumstance which did not obtain with the Austrian or Russian. The difficulty is that the Ukrainian classification probably includes only a part of those who might properly be so classed. There were about 13,000 persons reported as of Austrian origin who spoke Ukrainian as the mother tongue, and it is probable that there were also some Ukrainians among the 21,000 so-called Polish who were reported as speaking Ukrainian as the mother tongue and among the 4,500 Roumanians similarly reported.

It is clear, therefore, that in certain cases, especially with people from Eastern and Central Europe, the racial origin classification signifies, primarily, original geographical habitat. In view of these difficulties the data in the present report are presented not only by individual origins but by broad geographical and linguistic classifications. Separate figures have been computed for the North Western and South, Eastern and Central European origins, and for the Scandinavian, Germanic, Latin and Greek and Slavic groups. In some of the linguistic groups certain proportions speaking other languages were necessarily included. For example, the Austrians and Russians were classed as Slavs, yet about 46 p.c. of the former and 35 p.c. of the latter spoke German as the mother tongue. The Roumanians were placed among the Latins and Greeks although over a quarter used German or Ukrainian as the mother tongue. Apart from those three exceptions, however, considerable homogeneity appears within the larger groupings, and in one of the cases mentioned (the Russians) it is a matter of debate whether from the point of view of culture the Germans of Russia domiciled in Canada are not closer to the Slavs than to the Germans coming to Canada from Germany.

The above facts and explanations concerning the "origin" classification should be borne in mind in reading the subsequent pages of this monograph. Except in the case of the Hebrews, the term "origin" *always* connotes the original geographical habitat of a population group, *usually* implies a distinct culture, and *often* a definite biological strain. In any case, it refers to a specific group of immigrants and their progeny.

Corrected List of Racial Origins in Canada, 1931.—While throughout the present monograph the returns as actually given to the census enumerator and as tabulated and cross-classified in the several census volumes must be used as the basis for all analyses and discussion, it was thought worthwhile to attempt to prepare an official corrected list showing the probable racial strength of each stock in Canada as accurately as can be deduced from both the origin and collateral information collected at the time of the census. There seems no doubt that through ignorance or intent quite a considerable number of mis-statements of racial derivation occurred and it is important to have some idea as to where such mis-statements occurred and as to their extent.

In Table III will be found a list of origins; the first column shows the number of each race in Canada based on statements to the census enumerator, and the second column gives the number corrected from considerations shown in Tables 1, 2 and 3 at the back of the monograph.

The bases of correction were the statistics on mother tongue, birthplace and intermarriage. Table 1 shows for each important European race the number giving the mother tongue corresponding to that race and also the numbers giving other mother tongues. With this information are compared figures of birthplace and of marriage within the race itself and of intermarriage with the races corresponding to the other mother tongues given.* For example, when one takes the German race, one finds 473,544 persons reporting themselves as of German racial origin in the census of whom 264,515 give German as their mother tongue and 209,029 give other mother tongues. The racial origin of those giving German as the mother tongue is regarded as being correctly stated but is there any reason to question the reported origin of any of the 209,029 giving other mother tongues? One finds 202,072 of these giving English, but at the same time that 375,514 Germans were born in British territory or the United States and that 87.9 p.c. of the Germans marrying into other races married into British races. Consequently there is no reason to question the 202,072 figure. The birthplace and intermarriage data easily explain the number giving English as a mother tongue. Going over the other mother tongues given by the German race, there appears to be no figure which could not be explained by birthplace or intermarriage.

When, on the other hand, one examines, say, the Roumanian returns, one finds three questionable cases, *viz.*, where the person of the Roumanian race gives German, Magyar or Ukrainian as mother tongue. Of course any of these mother tongues are possible because Roumania annexed Bukovina, a part of old Austria-Hungary, but in view of the fact that neither birthplace nor intermarriage can well account for all of the cases reported, the presumption is that the unexplained portion were really German, Hungarian or Ukrainian.

From a calculation based on four samples it was found that the relationship between the birthplace and the mother tongue was constant, *viz.*, that 15 p.c. of the birthplace accounted for

*As indicated by parentage of children born in Canada. 1930-32.

the mother tongue corresponding to that birthplace but different from that of the race, where the two were different.* On the other hand, intermarriage seemed to explain mother tongue person for person. The corrections as shown in Tables 3 and III are based upon these relationships. The tables should be self-explanatory.

TABLE III.—NUMBERS OF EACH RACIAL ORIGIN ACCORDING TO THE CENSUS AND CORRECTED NUMBERS, CANADA, 1931¹

Racial Origin	Total From Census Figures	Corrected Total	Racial Origin	Total From Census Figures	Corrected Total
CANADA.....	10,376,786	10,376,786	Italian.....	98,173	98,277
English.....	2,741,419	2,741,419	Lithuanian.....	5,876	5,876
Irish.....	1,230,808	1,230,808	Norwegian.....	93,243	93,243
Scottish.....	1,346,350	1,346,350	Polish.....	145,503	136,211
Other British.....	62,494	62,494	Roumanian.....	29,056	21,860
French.....	2,927,990	2,927,990	Russian.....	88,148	60,302
Austrian.....	48,639	0	Swedish.....	81,306	83,084
Belgian.....	27,585	27,585	Ukrainian.....	225,113	244,629
Bulgarian.....	3,180	3,415	Yugoslavic.....	16,174	11,374
Czech and Slovak.....	30,401	34,114	Other European.....	6,232	6,232
Danish.....	34,118	34,118	Chinese.....	46,519	46,519
Dutch.....	148,962	148,962	Japanese.....	23,342	23,342
Finnish.....	43,885	42,107	Other Asiatic.....	14,687	14,687
German.....	473,544	549,379	Eskimo.....	5,979	5,979
Greek.....	9,444	9,189	Indian.....	122,911	122,911
Hebrew.....	156,726	156,726	Negro.....	19,456	19,456
Hungarian.....	40,582	39,169	Various.....	681	681
Icelandic.....	19,382	19,382	Unspecified.....	8,898	8,898

¹This table and the analysis on which it was based was made by M. C. MacLean, Chief of Social Analysis.

It will be noticed that there are a number of instances where the corrected figure is appreciably larger or smaller than that shown in the census. All of the 49,000 reporting themselves as of Austrian racial origin have been distributed among other categories. No changes seemed necessary in the Anglo-Saxon, French, Belgian, Danish, Dutch, Hebrew, Icelandic, Italian, Lithuanian, Norwegian, Other European, Chinese, Japanese, Eskimo, Indian or Negro totals. The corrected figures for the Bulgarian, Czech and Slovak and Swedish races were slightly larger than those given in the census; that for the Ukrainian was moderately and that for the German materially larger. A few were smaller, the Finnish, Greek and Hungarian totals being reduced slightly and the Yugoslavic, Polish, Roumanian and Russian to a greater extent. As was intimated above, however, with only two or three exceptions, these inter-racial transfers seldom crossed the broader geographical and linguistic groupings used throughout this monograph. The preceding table should prove of value for reference when studying the subsequent chapters.

Table 4 summarizes the material used in making the above corrections in a somewhat different and perhaps more convenient form.

Classification of Mixed Stocks.—The male line is used in the census for tracing derivation by racial origin. In this connection the population falls into two main categories: (1) the peoples who because of recent arrival or lack of assimilability have maintained their original purity and (2) those who have intermarried freely for several generations. In the case of those falling within the first category, the procedure of the census is obviously satisfactory. In the case of those falling within the second category, however, it might be objected that there are many

*To illustrate let us take the Ukrainians. For persons of that race not speaking one of the Ukrainian languages as mother tongue the following data were computed:—

X_1 Mother Tongue	X_2 Birthplace	X_3 Intermarriage
P.C. giving German	P.C. giving Austria or Germany	P.C. of married males and females married to persons of German race
P.C. giving Hungarian etc.	P.C. giving Hungary etc.	P.C. of married males and females married to persons of Hungarian race etc.

Similar figures were computed for each origin and the several hundred values of X_1 (with their associated values of X_2 and X_3) were ranked according to the size of X_1 . The array was divided into four equal parts, the first including all the very large X_1 's, the second the next largest and so on. Each of these parts served as a sample for the computation of a correlation between X_1 , X_2 and X_3 , and in all cases the coefficient of X_2 in the regression equation was found to be approximately 0.15 and that of X_3 to be approximately 1.00.

individuals whose origins are so intermixed through intermarriages that their designation as of the origin indicated by their fathers' patronymics is largely meaningless. This may be accepted as true in so far as the individual is concerned. The fact remains, however, that by the law of large numbers the practice followed in the census will yield approximately accurate measurements of the different infusions of blood that have gone to make up the total.

The Importance of Racial Origin Data to Canadians.—The significance of the preceding paragraph becomes clear when one considers in greater detail the purposes for which racial origin data are collected. Apart from purely scientific studies such data have two types of use. First, they have an important bearing on the study of immigration, for they show with what measure of success the newer peoples are mixing with the basic stocks of the country and adapting themselves to Canadian institutions. In the second place, such data have considerable historical interest in recording not only the continuous infusion of foreign blood and foreign cultures from abroad, but the combined effect of natural increase and immigration on the racial origin structure of the population.

In its bearing upon the problem of immigration, the accuracy of the origin classification varies directly with its importance to public policy. With certain categories of immigrants there is no problem, *viz.*, with such as readily intermarry with the native English and French stock in Canada and are easily assimilated in other respects. The larger the amount of intermarriage the greater is the number, for example, with part English blood who are classified as of Swedish origin and *vice versa*. As the fusion proceeds the social behaviour of such groups becomes more and more alike. However, even when such peoples have merged biologically and socially, the origin data perform a practical function in tracing the progress of the assimilative process and in finally demonstrating that assimilation has taken place.

There are other peoples who are less successful in adapting themselves to Canadian social and legal institutions or who because of recent arrival are comparatively unassimilated. The presence of such population elements constitutes a real problem. In many cases much less intermarriage has taken place than is often supposed. It is shown in Chapter VII, for instance, that only about 7 p.c. of the married men of South, Eastern and Central European origin had married into the British or French stocks in Canada up to 1931 and less than 6 p.c. of the women. Almost all of those classed as of Slavic stock are of Slavic or allied origin and the origin data for such people may be taken as accurately describing the behaviour of very definite groups in the population. This will continue to be the case until intermarriage has proceeded much further than it has done up to the present.

The origin data are thus most adequate in the case of groups where accuracy is most desirable, for it is with the groups where intermarriage has made least headway that the progress of assimilation is slow and merits careful attention. The differences established in the various chapters of this report testify to the adequacy of the census procedure in respect to these unassimilated peoples.

CHAPTER I

RACIAL ORIGINS OF THE POPULATION OF CANADA*

A population composed of many diverse stocks differs in many respects from one with a small admixture of foreign elements. First, there is the biological aspect. In certain parts of the world the problem of the half-caste or half-breed has assumed grave proportions. In Canada, this type of problem is largely potential. Such is not the case, with the various cultural sides of intermingling. Peoples of different origins have different educational, moral, economic, religious and political backgrounds. These differences in large measure determine not only the present but the future quality of our national life and some attempt will be made to evaluate their influence in subsequent sections of this monograph. A necessary antecedent to any detailed study of the problems of assimilation, however, is a general survey of the existing origin structure of our population and of the changes which have occurred therein during recent decades. Such is the task of the present chapter.

The Proportion of Specified Stocks in the Population of Canada.—The proportions of the various stocks in the population of Canada, in 1901, 1911, 1921 and 1931 are shown by principal origins in Table IV. Changes in these proportions are generally attributable to the joint operation of three main forces: first, immigration; second, emigration; and third, natural increase.

Attention is first drawn to the present composition of our population. In 1931 slightly over half of the population of Canada was of British stock, and somewhat over a quarter of the population, French. The other European origins combined constituted 17.59 p.c. of the total, and the Asiatics less than 1 p.c. The Indians made up 1.2 p.c., while the proportion of Negroes stood at the very low figure of less than one-fifth of 1 p.c. All coloured peoples combined totalled slightly over 2 p.c. Thus the population of Canada, as a whole, is as yet predominantly of British and French stock; these two constituted over 80 p.c. of the people domiciled in the Dominion at the date of the last census. Other white races, principally European, accounted for approximately nine-tenths of the remaining 20 p.c.

* See also 1931 Census, Vol. I, Chap. VIII, Introduction.

TABLE IV.—PROPORTIONS OF VARIOUS STOCKS IN THE POPULATION, CANADA, 1901-1931

Racial Origin	Percentage of Total Population			
	1901	1911	1921	1931
British.....	57.03	54.08	55.40	51.88
English.....	23.47	25.30	28.96	26.42
Irish.....	18.41	14.58	12.61	11.86
Scottish.....	14.90	13.85	13.35	12.97
Other.....	0.25	0.35	0.48	0.60
French.....	30.70	28.52	27.91	28.22
Other European.....	8.53	12.82	14.19	17.59
Austrian, n.o.s.....	0.20	0.59	1.23	0.47
Belgian.....	0.06	0.13	0.23	0.27
Bulgarian.....	—	—	0.02	0.03
Czech and Slovak.....	—	—	0.10	0.29
Dutch.....	0.63	0.76	1.34	1.44
Finnish.....	0.05	0.22	0.24	0.42
German.....	5.78	5.46	3.35	4.56
Greek.....	0.01	0.05	0.06	0.09
Hebrew.....	0.30	1.05	1.44	1.51
Hungarian.....	0.03	0.19	0.15	0.39
Italian.....	0.20	0.53	0.76	0.85
Lithuanian.....	—	—	0.02	0.06
Polish.....	0.12	0.46	0.61	1.40
Roumanian.....	0.01	0.03	0.15	0.28
Russian.....	0.37	0.60	1.14	0.85
Scandinavian.....	0.58	1.49	1.90	2.20
Danish.....	—	—	0.24	0.53
Icelandic.....	—	—	0.15	0.19
Norwegian.....	—	—	0.78	0.90
Swedish.....	—	—	0.70	0.78
Ukrainian.....	0.11	1.04	1.21	2.17
Yugoslavic.....	—	—	0.04	0.16
Other.....	0.10	0.09	0.18	0.06

TABLE IV.—PROPORTIONS OF VARIOUS STOCKS IN THE POPULATION, CANADA, 1901-1931—Con.

Racial Origin	Percentage of Total Population			
	1901	1911	1921	1931
Asiatic.....	0.44	0.90	0.73	0.81
Chinese.....	0.32	0.39	0.45	0.45
Hindu.....	—	0.03	0.01	0.01
Japanese.....	0.09	0.13	0.18	0.22
Syrian.....	0.03	—	0.09	0.10
Other*.....	—	0.05	0.01	0.02
Eskimo.....	—	—	0.04	0.06
Indian.....	2.38	1.46	1.26	1.18
Negro.....	0.32	0.23	0.21	0.19
Various*.....	—	0.25	—	0.01
Unspecified.....	0.59	2.04	0.24	0.06

*Includes Bohemian, Bukovinian and Slavic.

*Includes Lithuanian and Moravian.

*Includes Bulgarian.

*Includes Cuban, Landler, Lettish, Maltese, Portuguese, Serbian, Spanish and Swiss.

*Includes with Other Asiatic.

*Includes Arabian, Armenian, Korean, Malayan, Persian, Phœnician, Siamese and Turkish.

*Included with Indian.

*Includes Argentinian, Bermudan, Brazilian, Chilian, Creole, East Indian, Egyptian, Haitian, Jamaican, Maoric, Mexican, Moorish, Phillipine, Zulu, Puvian, Algerian and Hawaiian.

n.o.s.—not otherwise specified.

The Numerical Strength of Specified Stocks in Canada.—The numerical strength of the principal stocks in Canada as recorded in the 1931 Census is shown in Table V. For ten origins the totals exceeded 100,000. These origins are arranged in descending order of numerical importance in the following list:—

Racial Origin	Rank	Racial Origin	Rank
French.....	1	Ukrainian.....	6
English.....	2	Hebrew.....	7
Scottish.....	3	Dutch.....	8
Irish.....	4	Polish.....	9
German.....	5	Indian.....	10

Several changes occurred in this list during the decade. In 1921, the English ranked first exceeding the French by some 93,000; in 1931, the French had assumed the premier position outnumbering the English by nearly 187,000. This does not mean, of course, that the French outnumber the Anglo-Saxons as a group. There were only fifty-four French to every hundred persons of English, Irish, Scottish and Welsh descent combined, but the proportion has been increasing. In 1921 it was fifty. The explanation of this relative increase is to be found in a number of causes among which might be mentioned declining immigration from the British Isles, emigration of Anglo-Saxons to the United States and other countries especially during the earlier years of the decade, repatriation of large numbers of French Canadians from the United States and a generally higher rate of natural increase on the part of the French as compared with the various Anglo-Saxon peoples.

Another important change is the moving of the Ukrainians from tenth to sixth place. This origin group increased from 107,000 to 225,000 or more than doubled in the ten-year period. Of the 118,000 added to the Ukrainian group, about 41,000 or 35 p.c. are estimated to have come by natural increase and 77,000 or 65 p.c. by immigration. At any rate, by 1931, the Ukrainians ranked second only to the Germans among the non-Anglo-Saxon and non-French stocks in Canada.* The Hebrew race came next and they in turn were followed by the Dutch. The Polish group which ranks ninth in numerical importance appears in the 100,000 class for the first time in 1931 while the Austrians and Russians recede from the 100,000 mark which they attained in 1921. These changes are more difficult of explanation. Of the 92,000 increase in the number of Polish extraction, 14,400 or 16 p.c. is attributable to natural increase, 51,300 or 56 p.c. to immigration, leaving a balance of 26,300 or 28 p.c. unaccounted for. There is some evidence to suggest that the discrepancy may be explained by mis-statement of origin on the part of a considerable number of Polish Jews who reported themselves as of Hebrew origin in 1921, but claimed Polish extraction in 1931. The actual increase in Hebrews as shown by a comparison of the 1931 and 1921 Census tabulations fell some 30,000 short of the expected increase on the

* Unpublished memorandum by M. C. MacLean, Dominion Bureau of Statistics

basis of recorded births, deaths and immigration. The shortage, of course, might have been caused by emigration, but such an explanation is not supported by the Jewish Year Book figures. The former alternative is, therefore, the most probable and is confirmed by the close numerical correspondence between the Hebrew deficit and the Polish surplus. The one provides at least a plausible explanation of the other. As contrasted with the Polish, the Russian total was smaller than expectation by some 43,000 and the Austrian by 71,300. A portion of these differences is undoubtedly accounted for by mis-statement of origin in 1921 and represents a transfer to the German origin group which exceeded expectation by some 40,000. In the 1921 Census, 26,515 "Russians" over 10 years of age or 39 p.c. of all "Russians", and 28,748 of the "Austrians" over 10 years of age or 41 p.c. of all "Austrians" gave German as their mother tongue. At the same time, a considerable deficiency in the census returns of that year was noted in the total for the German racial origin group. It is reasonable to suppose that with the passing of the post-War prejudice against Germany, many who reported themselves as of Russian or Austrian origin in 1921, reverted with their descendants to their German origin classification in 1931 reducing to that extent the Austrian and Russian figures and increasing the German. Such at least is a tentative explanation of part of the decreases in the former origin categories. It is also reasonable to suppose that some of the gains recorded for the Yugoslavic and Serbo-Croatian groups were at the expense of the Austrian while a portion of those recorded for the Roumanian, Polish and Lithuanian categories were at the expense of the Russian. During the decade, former immigrants from pre-War Austria-Hungary and the western parts of European Russia doubtless acquired a more accurate understanding of the territorial changes effected in national boundaries in Central and Eastern Europe at the close of the War and were influenced thereby in reporting racial origins in 1931. A third factor contributing to the deficiency in the Austrian and Russian 1931 totals is emigration. A study of nativity data suggests that a certain amount did occur but its importance is difficult to determine with any significant degree of accuracy.

When the *foreign* stocks are grouped geographically and linguistically some interesting facts are brought to light (see Tables VI and VII). The North Western European stocks exceeded those from South, Eastern and Central Europe by about 12 p.c. (as compared with 20 p.c. in 1921). The former represent in the main the "old" immigration, and the latter the "new". The time is rapidly approaching when the Northern and Western European peoples will no longer constitute the bulk of the non-French and non-Anglo-Saxon stock in Canada. During the past three decades the South, Eastern and Central Europeans have been rapidly overtaking the North Western Europeans in Canada*. Among the linguistic groups, the Germanic ranks first with the Slavic a close second. The Scandinavian comes third with two-fifths the numerical strength of the Slavic; and the Latin and Greek is the smallest with about three-fifths as many as in the Scandinavian.

* The reasons for this change will be discussed in subsequent sections on immigration and fertility.

TABLE V.—POPULATION, BY RACIAL ORIGIN, CANADA, 1931

Racial Origin	Number	Racial Origin	Number
All races.....	10,376,786	Hebrew.....	156,728
British.....	5,381,071	Hungarian.....	40,582
English.....	2,741,419	Icelandic.....	19,382
Irish.....	1,230,808	Indian.....	122,911
Scottish.....	1,346,350	Italian.....	98,173
Other.....	62,494	Japanese.....	23,342
French.....	2,927,990	Lithuanian.....	5,875
Austrian, n.o.s. ¹	48,639	Negro.....	19,456
Belgian.....	27,585	Norwegian.....	93,243
Bulgarian.....	3,160	Polish.....	145,503
Chinese.....	46,510	Roumanian.....	29,056
Czech and Slovak.....	30,401	Russian.....	88,148
Danish.....	34,118	Swedish.....	81,306
Dutch.....	148,962	Syrian.....	10,763
Eskimo.....	5,079	Turkish.....	225,113
Finnish.....	43,885	Ukrainian ²	16,174
German.....	473,544	Yugoslavic.....	8,898
Greek.....	9,444	Unspecified.....	10,847
		Various ³	

¹ n.o.s.—not otherwise specified. About three-quarters of those reporting themselves as of Austrian racial origin gave German as the mother tongue and one-quarter gave Ukrainian.

² Includes Bukovinian, Galician, Ruthenian and Ukrainian.

³ Includes "other" European, "other" Asiatic, and Various. Lettish, Portuguese and Spanish included with "other" European. Swiss distributed among French, Italian and German on basis of mother tongue.

TABLE VI.—POPULATION OF EUROPEAN RACIAL ORIGINS (BRITISH AND FRENCH EXCEPTED), BY GEOGRAPHICAL GROUPING OF ORIGINS, CANADA, 1931

Racial Origin	Number	Racial Origin	Number
North Western European.....	878,140	South, Eastern and Central European—Con.	
Belgian.....	27,588	Greek.....	9,444
Danish.....	34,118	Hungarian.....	40,582
Dutch.....	148,962	Italian.....	98,173
German.....	473,544	Lithuanian.....	5,876
Icelandic.....	19,382	Polish.....	145,503
Norwegian.....	93,243	Roumanian.....	29,056
Swedish.....	81,306	Russian.....	88,148
South, Eastern and Central European.....	784,154	Ukrainian.....	225,113
Austrian, n.o.s. ¹	48,639	Yugoslavian.....	16,174
Bulgarian.....	3,160		
Czech and Slovak.....	30,401	Other European ²	6,232
Finnish.....	43,885		

¹ n.o.s.—not otherwise specified. See footnote 1, Table V.² Includes Swiss, Lettish, Spanish, Portuguese, etc.

TABLE VII.—POPULATION OF EUROPEAN RACIAL ORIGINS (BRITISH AND FRENCH EXCEPTED), BY LINGUISTIC GROUPING OF ORIGINS, CANADA, 1931

Racial Origin	Number	Racial Origin	Number
Scandinavian.....	228,049	Latin and Greek.....	136,673
Danish.....	34,118	Greek.....	9,444
Icelandic.....	19,382	Italian.....	98,173
Norwegian.....	93,243	Roumanian.....	29,056
Swedish.....	81,306	Slavic.....	563,014
Germanic.....	650,091	Austrian, n.o.s. ¹	48,639
Dutch.....	148,962	Bulgarian.....	3,160
Belgian.....	27,588	Czech and Slovak.....	30,401
German.....	473,544	Lithuanian.....	5,876
		Polish.....	145,503
		Russian.....	88,148
		Ukrainian ²	225,113
		Yugoslavian.....	16,174

¹ n.o.s.—not otherwise specified. See footnote 1, Table V.² Includes Bukovinian, Galician, Ruthenian and Ukrainian.

In 1931, the Ukrainians constituted 40 p.c. of the Slavic group, the Polish 26 p.c. and the Russian 16 p.c.—a combined figure of 82 p.c. for the three races. All others contributed only 18 p.c. to the total. The Italians numerically dominated the population of Latin and Greek extraction with 72 p.c. of the total; the Roumanians represented 21 p.c. and the Greeks only 7 p.c. In the Germanic group, Germans accounted for 73 p.c. and Dutch for 23 p.c. or 96 p.c. between them. The Scandinavians were more evenly distributed among the individual stocks included under that heading; the Norwegian constituted 41 p.c., the Swedish 35 p.c., the Danish 15 p.c. and the Icelandic 9 p.c. These proportions should be kept in mind when considering the behaviour of the several linguistic groups.

Changes in the Proportion of Different Stocks in Canada.—While the proportion of stocks other than British and French in Canada in 1921 remains moderate, a comparison of the data at the last four census dates reveals some significant trends (Table IV). Both the British and the French show appreciably smaller proportions in 1931 than in 1901. Since the beginning of the century the percentage of British stock in the Canadian population declined over 5 p.c. (from 57.03 to 51.86 p.c.). The decline was arrested by the large volume of English immigration between 1911 and 1921 but proceeded at an accentuated rate during the past decade. Despite the relative insignificance of immigration of persons of French origin from abroad, the decrease in the proportion of French in our population during the first three decades of the present century was less than half that for the Anglo-Saxon races. The decline was most marked during periods of heavy foreign immigration. In the last decade the French more than held their own, an achievement for which high fertility is chiefly responsible (see Chapter XIII). The proportion

of other European origins on the other hand increased from 8.53 p.c. in 1901 to 17.59 p.c. in 1931. It thus more than doubled in the thirty-year period. Between 1901 and 1921 the Asiatics increased almost twice as rapidly as the population as a whole. The differential increase was less marked during the last decade and was confined largely to the Japanese. The rapid increase of the Chinese during the first twenty years of the century, the retarding influence of heavy head tax notwithstanding, is an indication of the potential pressure of Oriental immigration; the continued disproportionate rate of increase for the Japanese, despite the "gentleman's agreement", reflects the influence of natural increase.

In contrast with the Orientals, the Indian and Negro stocks have failed to keep pace with the rest of the population. Thirty years has seen the proportion of Indian stock cut in half. Next to the Indians the proportion of Negroes has declined most rapidly. In 1931 it was less than two-thirds that of 1901.

Changes of such magnitude, if continued for half a century or more will produce material alteration in the racial composition of the Canadian people.

A somewhat different approach is suggested by Table 5 (p. 225), which shows the numbers of the principal stocks in Canada at the last four census dates and the percentage increase for each stock in the decades 1901-11, 1911-21 and 1921-31. The last three columns permit direct comparison of the actual rates of growth of the various stocks.

Considering first the figures for the opening decade of the century the initial point to note is the wide range of percentage increases. In that decade they fluctuated between the limits of -17 p.c. for the Indians (partly due to change in census methods) to +12,528 p.c. for a group of minor stocks specified in footnote 8 of the table.

A second point of interest in that decade is the group of stocks with percentage increases less than that for the total population of Canada. There were five such stocks, which when arranged in descending order of magnitude of percentage increases are as follows:—

	P.C. Increase 1901-1911
British	27.22
German	26.67
French	24.59
Negro	- 3.21
Indian	-17.45

Though the English section of the British races grew 10 p.c. faster than the population as a whole, the British as a group increased 7 p.c. less rapidly. The French showed an increase of only 24.59 p.c., as against 34.17 p.c. for the total population.

The relative significance of various factors in bringing about these results can not accurately be weighed. The smallness of French immigration from overseas as compared with that of other stocks and heavy emigration of French Canadians to the States were chiefly responsible for the wide spread between the French and Dominion rates. That the rate of increase for the British stocks exceeded that for the French in this and the succeeding decade is attributable to heavy Anglo-Saxon immigration during the period. The relatively low figure for the Germans is the natural consequence of an unusually large volume of German immigration during the preceding two or three decades. As will be shown in Chapter II, the Germans were among the earlier of foreign immigrants to this country. The absolute decreases for the Negro and Indian stocks confirm the tendency noted above as to the declining importance of these stocks in our population structure.

Turning now to the stocks which grew more rapidly than the population as a whole, attention is drawn to the magnitude of the numerical and percentage increases for the Asiatic and European origins (other than British and French). As a group, the other European races increased by four times as large a proportion as did the English and French. The rate was such as to more than double the European stocks in the one decade, and was much higher for specific origins. For example, the Belgians and Scandinavians trebled; the Hebrews and Italians increased more than fourfold, and the Poles and Finns, respectively, were numerically five and six times stronger in 1911 than in 1901. The Asiatics increased three times as rapidly as the British.

These figures appear extremely large when compared with the increases of 27.22 p.c. for the British, 24.59 p.c. for the French and 34.17 p.c. for the population as a whole. It was not to be expected that such extreme differences would be repeated or could possibly obtain for any length of time. Of course, if the doors were thrown open to Orientals, the rate of increase of these people in Canada would undoubtedly soar for some years, but such an event may be dismissed as beyond the range of probability. For Europeans, however, the case is different. Continental Europe has a more or less determinate surplus of population for emigration each year. With the gradually declining birth rate, that surplus is becoming smaller. On the other hand, as the numbers of the several stocks in Canada grow, larger and larger streams of immigrants would be required to keep up these abnormally large percentage increases. Thus, such diversity in rates of growth among the various elements in our population as was witnessed in the first ten years of the century will not likely occur again.

Turning now to the *second decade of the century*, one finds a pronounced downward trend in the rates of increase not only for the population as a whole but for all except four individual stocks. This period included three years of the heaviest immigration in the history of the Dominion and four years of war with arrested immigration, reduced natural increase owing to the absence of soldiers overseas and heavy male mortality. The last three years of the period witnessed the resumption of immigration but on a very moderate scale. The net result was a drastic decline in the percentage increase in the total population—from 34.17 to 21.94 p.c. The increase in immigrant European stocks fell from 101.71 p.c. to 35.01 p.c., a figure only three-fifths larger than that for the entire population. The decline in the rates for the British and French were less marked. The four exceptions where the rates exceeded those in the previous decade are easily accounted for. The case of the Dutch is more apparent than real. It is attributable to mis-statement of racial origin in 1921 on the part of many thousands of Germans. Recent investigations indicate that a similar cause contributed to the high figure for the Russians, although especially heavy immigration directly preceding the War was a factor of some importance.* The other two exceptions were the Negroes and North American Indians for whom recorded declines in the previous decade were converted to moderate increases. The former probably constitutes a *bona fide* change; the latter a spurious one because of the unreliability of the 1901 figure to which reference was made above.

During the second decade of the century, then, declining rates of growth were almost universal. Nevertheless, all but a very few stocks increased much more rapidly than either the British or French.

Coming finally to the *last decade* one encounters several quite significant changes. For the British races the rate of increase fell to 42 p.c. of the figure for the preceding decade (i.e. from 24.94 p.c. to 10.52 p.c.); for the Asiatics to 53 p.c. (from 53.23 to 28.27 p.c.). The rate for the French, on the other hand, remained unchanged while that for other European races rose from 35.01 to 46.36 p.c. or by nearly one-third. The net result was that while the rate of growth for the population as a whole was only moderately lower than that during the previous decade, the disparity between the rates of increase of the important stocks of the country was greatly accentuated. In the absence of the customary volume of immigration from the British Isles the French increased almost twice as rapidly as the Anglo-Saxon races; and with the resumption of moderate immigration from Continental Europe and continuing higher birth rates among earlier immigrants, foreign European stocks increased nearly four and a half times more rapidly than the British (see Fig. 21). It need hardly be stated that such differential rates of increase if long continued will profoundly affect the racial structure of our population and available evidence points to the conclusion that *even if immigration is permanently barred*, significant changes are bound to occur (see Chapters VII and XIII).

Before closing this chapter a few comments by way of explanation of the behaviour of the figures for certain European races might not be out of place. The recorded absolute declines for the Austrians and Russians and the small magnitude of the increase for the Dutch are associated with the mis-statements of origin in 1921 to which reference was made earlier in this chapter. The same cause explains the drastic change in the figure for the German origin—from -25.09 p.c. between 1911 and 1921 to +60.72 p.c. in the last decade. The increases for the Czechs and Slovaks and Yugoslavs were probably also partly at the expense of the Austrians,

*See Introduction, p. 34.

and those for the Polish, Ukrainians and Lithuanians partly at the expense of the Russians. That is, they were to some extent a matter of reporting. It should not be overlooked, however, that during the last ten years immigration was relatively heavier for many of the aforementioned stocks, a circumstance which contributed materially to the prevalent higher rates of increase.

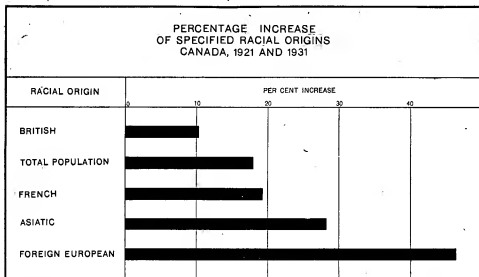


FIG. 21. The French population in Canada increased nearly twice as rapidly as the Anglo-Saxon during the last inter-censal decade despite considerable immigration from the British Isles. The fertility of married women of French extraction is over twice that for the Anglo-Saxons. Fertility is also high for Asiatics and many Continental Europeans. The Asiatics were only moderately augmented by immigration during the decade, but immigration from Europe, particularly from Eastern and Central Europe, was heavy.

CHAPTER II

NATIVITY AND DATE OF ARRIVAL

The Proportions of the Population Canadian-, United States- and Elsewhere-Born.—Table 6 shows the numerical distribution of the population by origins as between Canadian born, United States born and immigrants born in countries other than the United States. Tables 7 and 8 group the Europeans of Table 6 by rough geographical and linguistic classes, and Tables 9, 10, 11, and 12 express the same data in percentages. A summary appears in Table X.

In 1931, over 8,000,000 or 77·76 p.c. of the population of Canada were Canadian born. While the former figure is some 1,200,000 larger than that for 1921, the proportion is almost identical. Contrary to the general trend, the United States born numbered only 345,000 in 1931 as against 374,000 in 1921, indicating an absolute decline through death and emigration of nearly 40,000. The proportions which persons of United States birth constituted of the total population fell from 4·25 p.c. to 3·22 p.c. during the decade. At the date of the last census, persons born in countries other than Canada and the United States totalled 1,963,000* or 18·92 p.c. of the population (as against 18·00 p.c. in 1921). Of this number, 1,185,000† were British born, and 778,000 were from other foreign countries. While immigrants of British birth represent a declining proportion of the population (12·12 p.c. in 1921 and only 11·42 p.c. in 1931) the foreign born exclusive of United States born gained both in absolute and relative importance in the ten-year period, the numerical increase totalling 262,000 and the proportion rising from 5·88 p.c. to 7·50 p.c. The net effect on our population structure of immigration, emigration and natural increase between the two census dates, therefore, has been a decrease in the relative importance of both the British (other than Canadian) and United States born and an increase in the absolute and relative importance of the other foreign born.

Racial Origin of the Canadian, United States and Elsewhere Born.—The following percentages derived from the accompanying tables and similar tabulations for 1921 throw considerable light not only on the present racial composition of the several broad nativity groups in our population, but on the general direction and rates of change in their racial make-up. The percentages also indicate the type of contribution of each nativity class to the origin structure of the population as a whole.

*Includes 731 born at sea. See 1931 Census, Vol. II, Table 44, p. 709.

†See also 1931 Census, Vol. I, Chap. V, Introduction.

TABLE VIII.—PERCENTAGE DISTRIBUTION OF THE POPULATION, BY RACIAL ORIGIN AND BROAD NATIVITY GROUPS, CANADA, 1921 AND 1931

Racial Origin Group	P.C. Canadian-Born		P.C. United States-Born		P.C. Born Elsewhere	
	1921	1931	1921	1931	1921	1931
All races.....	100·0	100·0	100·0	100·0	100·0	100·0
Anglo-Saxon.....	52·9	50·0	54·8	50·6	66·6	59·8
French.....	34·8	36·3	13·5	16·1	1·4	1·1
Other North Western Europeans.....	5·7	6·9	24·4	26·8	8·5	11·6
South, Eastern and Central Europeans.....	3·7	4·7	4·1	3·8	15·3	19·9
Scandinavian.....	0·8	1·2	10·4	10·8	4·1	4·7
Germanic.....	4·6	5·7	13·6	16·0	4·2	6·9
Latin and Greek.....	0·6	0·9	0·7	0·7	3·0	3·2
Slavic.....	2·0	3·5	2·0	2·4	11·1	13·7

NOTE.—Omission of Finnish and Hungarian from linguistic grouping accounts for the fact that the figures for the South, Eastern and Central Europeans exceed the combined figure for the Latin and Greek and Slavic groups. The omission of the Swiss from the linguistic classification in 1921 accounts for the difference between the sum of the figures for the Germanic and Scandinavian groups and the North Western Europeans in the data for that census year. The reader is reminded of the minor changes in census procedure in 1931 which necessitates the omission of certain small racial groups from the geographical and linguistic classifications of that year, and of the case of the Germans, etc., who claimed incorrect racial derivation in 1921. Care should be taken to avoid unwarranted inferences from a comparison of the 1921 and 1931 figures for the geographical and certain of the linguistic groupings.

By 1931, the proportion of British stocks in the *Canadian-born* section of the population had fallen to 50.0 p.c. and the proportion of French origin had risen to 35.3 p.c., making a combined total of 85.3 p.c., which is 2.4 per 100 fewer than in 1921. During the same period, foreign European origins increased from 9.4 p.c. to something over 11.6 p.c. The relative contribution of the Anglo-Saxon races to the native population of Canada is, therefore, definitely declining, that of the French is increasing moderately while that of non-Anglo-Saxon and non-French origins is rapidly expanding, a circumstance which, as will be shown later, is capable of explanation in terms of more favourable age distribution and conjugal condition as well as generally higher fertility. A comparison of the above-mentioned figures (9.4 p.c. and 11.6 p.c.), reveals the fact that the *relative* importance of foreign European stocks among our Canadian-born people increased over 23 p.c. in the decade, their actual numerical strength rising from 636,000 to some 938,000 or in excess of 47 p.c.

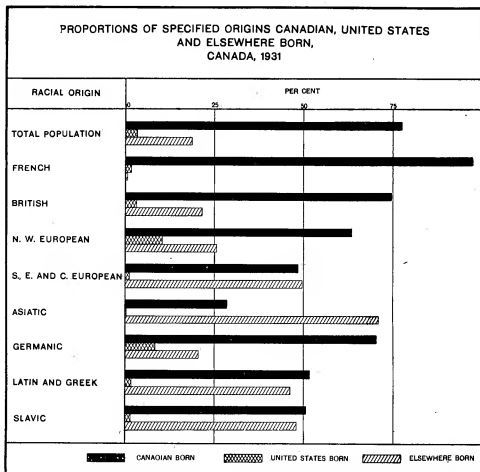


FIG. 22. The above chart emphasizes the distinction between the older and the newer ethnic elements in our population. As an index of length of residence it is of course quite rough because the percentages reflect differences in fertility and sex distribution as well as differences in date and volume of immigration. The figures for the Asiatics are greatly affected by abnormal sex distribution. The case of the Scandinavians who are omitted from the graph, is peculiar. While only 44 p.c. of that ethnic group was Canadian-born in 1931, over 16 p.c. was born in the United States making a total of 61 p.c. born on this continent. Among the foreign origins, this figure ranks second only to that of the Germanic group.

Of the 2,308,000 immigrants resident in Canada in 1931, 345,000* or slightly less than 15 p.c. were born in the United States. Of these some 174,000 or 50·6† p.c. were of British racial origins and 56,000 or 16·1 p.c. French. Among these United States-born residents of Canada, the Anglo-Saxon strain has been decreasing not only in relative importance, as in the case of the native Canadian born, but in absolute numerical magnitude and to an extent which can be explained only by the occurrence during the decade of a return movement to the United States of former Anglo-Saxon immigrants from that country. The French, on the other hand, have been increasing both absolutely and relatively, reflecting, in the main, immigration into Eastern Canada of descendants of French-Canadian settlers in the New England States. Anglo-Saxon and French combined constitute approximately 66·7 p.c. of the total United States born as against 85·3 p.c. of the native Canadian born. Figures for the other principal stocks, arranged in order of importance, are as follows:—

TABLE IX.—NUMBER AND PERCENTAGE OF UNITED STATES-BORN IMMIGRANTS OF CERTAIN RACIAL ORIGINS, CANADA, 1921 AND 1931

Racial Origin	1921		1931	
	No.	P.C. of Total U.S. Born	No.	P.C. of Total U.S. Born
German.....	40,009	11	44,998 ¹	13
Norwegian.....	22,186	6	21,451	6
Swedish.....	11,625	3	10,750	3
Dutch.....	10,176	3	9,751	3
Hebrew.....	4,851	1	4,346	1
Danish.....	4,122	1	3,880	1
Russian.....	6,158	2	3,065 ¹	1

¹ The decline of some 3,000 in the figure for the Russian origin as compared with that for 1921, is undoubtedly associated with the increase of some 6,000 in the German figure. Many thousands of Germans incorrectly reported themselves as some other racial origins (including Russian) at the post-War Census of 1921. This apparently applied to the United States as well as the European born.

It is rather significant that nearly 94 p.c. of the total United States-born residents of Canada are of British, French, German, Dutch and Scandinavian racial origin and that, despite the predominantly South, Eastern and Central European character of immigration to the United States since the later decades of the last century, persons of South, Eastern and Central European extraction constituted such a negligible proportion of the American settlers who came to and remained in Canada. A partial explanation would seem to lie in the fact that the so-called new immigration to the United States for the most part went to urban centres and entered industrial occupations.

The *elsewhere born* include immigrants from the British Isles and British Possessions other than Canada and persons born in foreign countries other than the United States—principally Continental Europe (Table 6, Col. 4). British-born immigrants from abroad are practically all of Anglo-Saxon racial origin; the foreign-born are almost exclusively of non-British stocks.† The proportion of British origins among resident immigrants from overseas was just under 60 p.c. in 1931 as compared with 66·6 p.c. in 1921, both of these figures being appreciably higher than the corresponding proportion in the other groups.

The preponderance of Anglo-Saxons among past immigration from abroad is seen to have been a major factor in retarding the decline in the percentage of British races in our population as a whole. During the last decade the French in Canada more than maintained their relative position with little or no assistance from European sources. Their relative importance among overseas immigrants declined from 1·4 to 1·1 p.c. That of the Asiatics fell from 3·3 to 2·9 p.c. The proportion of other European stocks among the overseas section of the population rose from 23·8 p.c. in 1921 to something over 31·5 p.c. in 1931, offsetting the previously-mentioned decline

*It is interesting to note that the total United States born resident in Canada in 1931 (345,000) was less than the estimated net emigration of native Canadians to the United States during the decade. See Hurd, W. B. and Cameron, J. G.: *Population Movements in Canada, 1921-31—Some Further Considerations*, The Canadian Journal of Economics and Political Science, Vol. 1, No. 2, May, 1935, p. 241.

†Figures for the individual provinces show that during the last inter-censal decade there occurred a heavy net emigration of United States born from the Prairie region and a moderate net immigration to Eastern Canada. See Chap. IV.

¹⁰Origin, Birthplace, Nationality and Language of the Canadian People—A Census Study Based on the Census of 1921 and Supplementary Data, p. 49.

in the proportions of British, French and Asiatic extractions.* In the overseas nativity group, South, Eastern and Central European races outnumber the North Western Europeans by nearly nine to five.

Proportions of Stocks Born in Canada, United States and Elsewhere.—Tables 9, 10, 11, 12 and X show the percentages of the respective stocks born in Canada, the United States and countries other than the United States, by various groupings. For purposes of distinguishing those born on the American Continent from all others, as in the previous tables, the British born, other than Canadian, are included with the other immigrant born in the third column in each table.

The first significant point brought out by these tables is the wide range of proportions shown as of Canadian birth. Neglecting the Eskimos and Indians, the French are highest with 97·36 p.c. Canadian-born and the Chinese lowest with 11·60 p.c. (Table 10). Three-fourths of the British stock is native Canadian, the Irish showing the high proportion of 85·59 p.c. and the Scottish and English following with 75·98 p.c. and 70·05 p.c., respectively. These figures conform closely to those of 1921 and on the surface would seem to imply that of the British immigrants, the Irish were on the whole the earlier settlers and the English the later, or put in another way, that in recent years immigration from Ireland has declined more in proportion than that from England and Scotland. It should be kept in mind, however, that the percentage of an origin group Canadian-born, is affected not only by the proportion between "new" and "old" immigrant arrivals, but also by sex distribution, conjugal condition and fertility of the group as a whole.† The analysis of these related factors is relegated to subsequent chapters of the monograph. By way of further contrast it is worthy of note that while under 3 p.c. of the French are foreign-born and of those nearly three-quarters came from the United States, over 25 p.c. of the British stock are of non-Canadian birth and of that number seven out of eight were born in Great Britain or elsewhere overseas.

In the case of the more important Asiatic races resident in Canada the proportions Canadian-born have appreciably increased during the past decade. Comparative figures are as follows:—

Racial Origin	P.C. Canadian-Born	
	1921	1931
Chinese.....	7·49	11·60
Japanese.....	27·31	48·46
Syrian.....	49·77	59·36

Deaths among original settlers coupled with arrested immigration and possibly some slight emigration have been contributory factors of some importance in all three instances. The remarkable increase for the Japanese is of special significance to the people of British Columbia and is to be explained in large measure in terms of high fertility and the presence of relatively large numbers of Japanese women (as compared, for example with the Chinese) in the Japanese population of that province.

Considerable variation in the proportions Canadian-born also appears within the geographical (Table 11) and linguistic (Table 12) groupings, although the spread is not so marked as in 1921. Several circumstances contribute to the latter result, viz., the absence in 1931 of separate tabulations for certain numerically less important origins, differential fertility rates, differential reductions in the volume of current immigration and the generally declining effect of additions from abroad on the nativity distribution of a stock with the lengthening of its residence in Canada and its resultant increase in numerical strength. Among the Northern Europeans, the Dutch show the largest percentage Canadian-born (79·89 p.c.) and the smallest overseas-born (13·58 p.c.). The Germans are second with 69·46 p.c. and 21·03 p.c., respectively. The Danish have the lowest proportion born in Canada (37·45 p.c.) and the Belgians have the highest European-born (56·97 p.c.). Somewhat less variation characterizes the South, Eastern and Central Europeans. In this group, the Ukrainians show the largest percentage Canadian-born

*These figures refer to resident survivors of past as well as current immigration. The shift from Anglo-Saxon to Continental European stocks in the immigration of the past decade was, of course, much more marked than in the data at present under review.

†Account must also be taken of the possibility of differential emigration particularly to the United States. Certain origins may have been disproportionately represented in the movement of native Canadians across the southern border.

(56.99 p.c.) and next to the Roumanians the smallest European-born (42.70 p.c.); the Yugoslavs are at the other extreme with only 20.01 p.c. Canadian-born and 78.51 p.c. born in foreign countries other than the United States. As for the linguistic groups, the nativity distribution of the Latin and Greek and the Scandinavian peoples are the more uniform, wider variations occurring within both the Germanic and Slavic racial groupings.

The Old and the New Immigration.—The North Western Europeans are often styled the "old" immigration, and the South, Eastern and Central Europeans as the "new". In 1931, Canadian born constituted 74.95 p.c. of the British stocks resident in Canada and 63.60 p.c. of the North Western Continental European races as against only 48.39 p.c. for the South, Eastern and Central Europeans. That such a difference occurs despite the generally higher fertility of the latter stocks (Chapter XIII) leaves no doubt as to the *general* validity of the distinction. Nevertheless, when the percentages for the individual origins are examined a certain amount of overlapping appears although it is not nearly so marked as in 1921.* Among the North Western Europeans with small proportions Canadian-born are the Belgians for whom the percentage is well below both the mean and the median for the Southern European group, and three of the Scandinavian races, *viz.*, the Danish, the Norwegian and the Swedish. The low proportions of Canadian birth for the latter stocks brings the percentage for the Scandinavian group down to 43.56 p.c. as compared with 51.90 p.c. for the Latin and Greek, 50.60 p.c. for the Slavic and 48.39 p.c. for the South, Eastern and Central European origins as a whole. The explanation was suggested when discussing the racial composition of immigration from the United States. While only 43.56 p.c. of the Scandinavians are Canadian-born (Table 12) an additional 16.26 p.c. were born in the United States and are thus at least of the second generation on this continent. An examination of the data will show that the influence of immigration from south of the line has been especially important in the case of the Norwegians, Swedes and Danes. While in some respects radical differences exist between Scandinavians born in Canada, the United States and the motherlands, from the standpoint of linguistic, economic and educational assimilation the United States and Canadian born are very similar. There are real grounds therefore for including the Scandinavians among the earlier immigrants. Of the Scandinavians resident in Canada in 1931, 60 p.c. were born on the North American Continent as against 54 p.c. for the Latins and Greeks and 52 p.c. for the Slavs.

A considerable proportion of United States born are also found among the Dutch and Germans in this country. While 80 p.c. of the Dutch and 69 p.c. of the Germans were born in Canada, over 86 p.c. of the former and 79 p.c. of the latter were born on this continent and raised under the more or less similar cultures of the two English-speaking North American nations.

Despite the rapid change in the nativity distribution of the Japanese, its second most important member, the Asiatic group is still unique with only 28.65 p.c. Canadian-born, 0.33 p.c. United States-born and 71.02 p.c. born in the Far East. These figures must be considered in the light of the peculiar conditions surrounding Oriental immigration and the unusual sex distribution obtaining particularly among the Chinese and Hindu residents of the Dominion.

Changes in the Nativity Distribution of the Several Racial Origins during the Decade 1921-1931.—Variations in the nativity distribution of a given stock from decade to decade result from a lack of balance between growth in the number of resident immigrants and of their descendants. The former is a function of immigration, emigration and deaths among the resident foreign born. The latter depends upon fertility, which in turn is a matter not only of fecundity but of conjugal condition, age and sex distribution of the stock as a whole, and upon deaths among the progeny of the original settlers which are intimately associated with age. In view of the extreme complexity of the problem, it is not considered worth while attempting any *complete* explanation of the changes which have occurred during the past decade, especially at this stage of our inquiry, but a few significant facts are revealed by a more or less cursory examination of the figures.

During the decade, the number of Canadian born increased for every origin group except the Austrian and Russian who suffered through transfer to the Germanic classification—purely a matter of reporting. Similarly, increases occurred in the number born overseas in all but five of the thirty-two origins for which individual data were available in the 1931 tabulations. Two

*In this connection the absence in 1931 of separate figures for the Portuguese who had a very high proportion Canadian-born is a contributory factor of considerable importance.

of the five exceptions are explained by mis-statement of origin in 1921 so that apart from that of the North American Indians, the only origins where a *bona fide* decrease in European born occurred were the French and Icelandic groups and in both of those cases the decreases were small. With the United States-born section of the various stocks, on the other hand, absolute decreases were the rule rather than the exception, and where exceptions occurred, the increases were of negligible proportions (save in the case of the Germans). The figures thus reflect a growing body of second and third generation of immigrant stocks, a continued supplementing of immigrant stocks from abroad, and the cessation, indeed the reversal, of the stream of immigration from the United States.

The percentages behaved somewhat differently. Of course, there was the common characteristic of declining proportions United States-born with the single exception of the Asiatics who reported a fractionally higher percentage in this category (Table X). As between the geographical and linguistic groups, however, there was considerable variation both as to the extent and direction of change. With the Scandinavians there occurred a marked increase in the proportion Canadian-born despite only moderate fertility. This increase must be associated with an even more drastic decline in the proportion United States-born, largely attributable to deaths of persons in the higher age categories. The Scandinavians were among the earlier immigrant settlers from the United States. Immigration from Scandinavian countries during the decade was of relatively modest proportions so that the percentage of the Scandinavian origin European-born showed only a minor change. The Latin and Greek group displayed an even greater increase in the proportion Canadian-born which in the absence of any commensurate decrease in the United States-born of that racial derivation must be explained in terms of high fertility, the inclusion of relatively large numbers of women in such immigration as came from abroad, and the material falling off in the rate of increase of immigration as a whole from the corresponding countries of birth. Rural immigration from Roumania was retarded because of the decline of agricultural prosperity in Canada and improved conditions for the peasant population at home; there was active discouragement of Italian emigration by the Government of that country. By way of contrast, with the Germanic and Slavic groups the proportions Canadian-born actually declined during the decade while the proportions born overseas showed significant increases. In the case of the Germanic peoples, the increase in the proportion European-born is attributable not so much to immigration as to the transfer of a very considerable number of the newer German stock from Slavic origins (principally Austrian and Russian) among whom they had been improperly included in 1921. By the same token, the increase in the European-born proportion of the Slavic group was greater than is indicated by the figures, since the 1921 percentage was too high because of the inclusion of Germans who incorrectly reported themselves as of Slavic racial origin. Immigration from Slavic countries during the decade thus far outran natural increase of the Slavic population already in Canada despite the unusually high fertility of the group. With the Asiatics as a whole and with the Japanese in particular, natural increase greatly exceeded new immigration from abroad with the result that the proportion Canadian-born rose radically and the proportion born overseas fell proportionately.

TABLE X.—SUMMARY OF PERCENTAGES CANADIAN, UNITED STATES-AND ELSEWHERE-BORN OF CERTAIN STOCKS, BY SPECIFIED GROUPS, CANADA, 1921 AND 1931¹

Racial Origin Group	P.C. Canadian-Born		P.C. United States-Born		P.C. Elsewhere-Born	
	1921	1931	1921	1931	1921	1931
Total.....	75.75	77.76	4.25	3.32	18.00	18.92
Total European (Continental).....	56.71	56.45	9.47	6.35	33.82	37.20
North Western European.....	63.06	63.80	14.95	10.53	21.99	25.87
South, Eastern and Central European.....	49.24	48.39	3.00	1.66	47.76	49.95
Scandinavian.....	37.61	43.56	23.27	16.26	39.12	40.18
Germanic.....	72.95	70.63	11.75	8.52	15.28	20.85
Latin and Greek.....	42.69	51.90	2.84	1.87	54.46	46.22
Slavic.....	51.41	50.80	2.73	1.46	45.81	47.93
Asiatic.....	18.04	28.65	0.05	0.33	31.48	71.02

¹ The data for 1931 (Table X) are represented diagrammatically in Fig. 22.

Changes in Sources of Immigration.—Hitherto attention has been focussed on the birthplace of the various stocks in Canada. We now turn to the changing percentage of the population born in various foreign countries with a view to studying more specifically the trend of immigration since the turn of the century. Tables XI and XII and Tables 13 and 14 will serve as a basis for the ensuing discussion.

TABLE XI.—PERCENTAGE DISTRIBUTION OF THE POPULATION, BY BIRTHPLACE, CANADA, 1901-1931

Birthplace	P.C. of Total Population			
	1901	1911	1921 ^a	1931
Canada.....	86.98	77.98	77.75	77.70
Other countries.....	13.02	22.02	22.25	22.24
British Isles.....	7.54	11.16	11.67	10.98
British Possessions.....	0.29	0.41	0.45	0.44
Europe.....	2.34	5.62	5.23	6.89
Austria.....	0.53	0.94	0.65	0.36
Belgium.....	0.04	0.11	0.15	0.16
Bulgaria.....	0.02	0.28	0.01	0.01
Czechoslovakia.....	—	0.02	0.05	0.22
Denmark.....	0.04	0.07	0.08	0.17
Finland.....	—	0.15	0.14	0.29
France.....	0.15	0.24	0.22	0.10
Germany.....	0.51	0.55	0.29	0.38
Greece.....	—	0.04	0.04	0.05
Holland.....	0.01	0.05	0.07	0.10
Hungary.....	—	0.15	0.09	0.27
Iceland.....	0.11	0.10	0.08	0.06
Italy.....	0.13	0.48	0.40	0.41
Norway.....	—	0.29	0.28	0.31
Poland ^b	—	0.44	0.74	1.65
Roumania.....	—	—	0.26	0.39
Russia.....	0.58	1.25	1.15	1.10
Sweden.....	0.19	0.39	0.32	0.33
Switzerland.....	—	—	0.04	0.06
Ukraine.....	—	—	0.13	0.13
Yugoslavia.....	—	—	0.02	0.16
Other.....	0.03	0.07	0.04	0.09
Asia.....	0.44	0.57	0.51	0.58
China.....	0.32	0.37	0.42	0.41
Japan.....	0.09	0.12	0.13	0.12
Syria.....	0.02	0.04	0.04	0.04
Turkey.....	0.01	0.03	0.01	0.01
Other.....	—	0.01	—	0.01
United States.....	2.38	4.21	4.26	3.32
Other countries.....	0.01	0.04	0.04	0.03
At sea.....	0.01	0.01	0.01	0.01
North Western Europe.....	1.08	1.80	1.61	1.73
South, Eastern and Central Europe.....	1.26	3.74	3.62	5.06

^a Included with Austria.

^b Included with Sweden.

^c Included with Russia.

^d Included with Bulgaria.

^e Changes in 1921 due to deduction of part ceded to Newfoundland.

^f Includes Galicia.

^g Less than one one-hundredth of one per cent.

The immigrant population resident in Canada at the census date June 1, 1931 numbered 2,308,000 as against 1,956,000 in 1921, 1,587,000 in 1911 and 700,000 in 1901.* Over the thirty-year period as a whole the increase in resident immigrants amounted to 230 p.c. as against a 73 p.c. increase in native born. Marked divergence in the two rates of increase, however, was confined to the first decade of the century. Since 1911, the increase in Canadian born has practically kept pace with that of the immigrant population as a whole. When one passes from a consideration of totals to individual nationalities, one finds that very significant shifts have been taking place in the relative importance of the different sources of immigration. In 1901, resident immigrants from the British Isles and other British Possessions, outnumbered immigrants from foreign countries by 52 p.c.; in 1911 by 11 p.c., in 1921 by 20 p.c.† and in 1931 by only 5.5 p.c. Thus while thirty years ago three out of five resident immigrants were from British countries, and two out of five from foreign countries, now their numbers are approximately equal. Changes

*1931 Census, Vol. II, Table 44, p. 709.

†The War affected immigration from European countries (particularly enemy countries) to a greater extent than that from the British Isles, temporarily reversing the trend in the data.

have also occurred in the relative importance of the different sources of *alien* immigration. In 1901, United States-born residents of Canada exceeded Continental European-born by 2 p.c.; in 1931 Continental Europeans outnumbered United States born by 107 p.c. This change is attributable in part to the comparative cessation of immigration from the United States during the two last decades, but to a greater extent to the growth of immigration from Europe, particularly from the South, Eastern and Central portions of the continent. The increasing preponderance of the South, Eastern and Central Europeans among the European immigrant residents of Canada, is shown by comparing their numbers with the North Western Europeans at the several census dates (Table 13). In 1901, the former exceeded immigrant residents from the countries of North Western Europe by 20 p.c.; in 1911, by 124 p.c.; in 1921, by 144 p.c. and in 1931, by over 194 p.c. In other words, while at the beginning of the century Canada had 120 immigrants from South, Eastern and Central Europe for every 100 from the north west section of the continent, in 1931 she had 294. Or put in still another way, during the thirty-year period resident immigrants from South, Eastern and Central Europe increased over seven and one-half fold, while those from North Western Europe increased threefold.

Before proceeding to a more detailed examination of the shifts in European immigration, some explanatory comments should be made regarding Tables 13 and 14. Owing to changes in national boundaries since the War and the consequent difficulty of securing pre-War statistics for countries of birth corresponding to present political divisions, separate data for certain countries have not been obtainable for the 1901 and 1911 columns. Even where complete statistics are shown for individual countries, care should be taken to make sure that they are directly comparable. In some cases, they are not. For example, Hungary is included with Austria in the 1901 data but not subsequently. When studying the figures the reader, therefore, is urged to follow the notations at the foot of Table 13. In many instances, of course, no significant change has occurred in the political boundaries or in census classification, so that direct comparison is warranted. This applies within a narrow margin of error to the *totals* for the geographical and linguistic groups where such are given. One linguistic sub-classification does not appear—the Slavic. Since only a small proportion of the Slavs enumerated in the earlier censuses could be re-allocated to their present national groups with any degree of certainty, it was considered impracticable to attempt a separate tabulation for this group.

A few words should also be said as to the meaning of percentage increases and decreases. Take for example the Belgians: in 1901-11, the number of European-born Belgians in Canada increased 249.78 p.c., *i.e.*, at an average rate of 25 p.c. per year over the 1901 total. The influx of Belgians was therefore adequate to offset any emigration that occurred in the period, to compensate for the deaths of Belgian immigrants already resident in Canada and to effect an increase in the number of Belgian-born persons resident in the Dominion in 1901 by two and one-half times. In the second ten years of the century the increase was only 66.47 p.c. During that decade, immigration was reduced, emigration was more marked and the mortality rate among the Belgian born was probably higher owing to the higher average age of the Belgian residents in Canada. The same type of explanation applies to the still smaller percentage increase of 28.30 p.c. for the last decade.

There is another consideration, however, which must be taken into account in explaining a given percentage increase. Take for example the Greeks: in 1901 there were 213 Canadian residents born in Greece; in 1911, 2,640—an increase of 2,427 in numbers but of 1,139.44 p.c. Between 1911 and 1921 the number of native Greeks in Canada increased by 1,129, but this number amounted to only 42.77 p.c. of the natives of Greece resident in Canada in 1911. When people from a given country begin coming to Canada on a considerable scale the percentage increases of the foreign born are usually high merely because of the small number of those who had previously come.

Though not so determining a factor, the death rate is usually lower for the "newer" immigration than for the "old". On the whole, the age distribution of the former is more favourable to low mortality. Few of the young men and women immigrating to Canada in the prime of life have had time to grow old in the case of the stocks who have come to Canada in recent years in large numbers. While differences attributable to this cause may be of comparatively minor importance in comparison with other factors mentioned, that such differences do exist must be pointed out if attention is to be drawn to all aspects of the problem. The actual percentage

changes are thus the result of a number of more or less independent causes which vary in importance from time to time and from one nativity to another. Clearly too much care can not be taken in using and interpreting the data given in these tables. While an exhaustive analysis is beyond the scope of this report, a few comments may be offered.

As was pointed out in the 1921 Monograph* the census returns covering the previous decade (1911-21) indicated an actual *decline* of some 2,000 or 1.39 p.c. in the number of foreign-born residents from North Western Europe, as against an *increase* of 41,500 or 15.41 p.c. in immigrant residents from South, Eastern and Central Europe. Absolute decreases in the North Western European born were confined to those of German, Icelandic and Swedish birth. In the case of the Germans, the decrease was attributed to the comparative cessation of immigration during the War, a rather high death rate because of long average residence in this country, emigration and mis-statement of place of birth. With the Icelandic and Swedish born there were no grounds for assuming mis-statement of place of birth as a contributory factor in the numerical declines. With these nationalities the comparative cessation of immigration and high mortality because of greater average age were of marked importance. In both instances the percentage declines were small. Nevertheless, the net effect of absolute decreases in these three nationalities and drastically reduced percentage increases in the others was a decline of 1.39 p.c. in the figures for the North Western European group as a whole as contrasted with an increase of 131.31 p.c. for the previous ten years (1901-11). Passing to Central Europe one is reminded that Austria, Hungary and Bulgaria were enemy countries during the War. Changes in political boundaries, emigration and mis-statement of country of birth probably all contributed to their negative percentage increases. Were comparative figures for individual nationalities more generally available, it would be found that, as with the North Western Europeans, retarded immigration and the increased size of base on which percentages were computed were reflected in lower rates of growth in all sections of the list. For the South, Eastern and Central European group as a whole the percentage increase fell from 232.57 p.c. in the decade 1901-11 to 15.41 p.c. in the decade 1911-21.

The post-War decade 1921-31 brought certain significant changes. The total for the North Western European born increased 35.29 p.c. as against the previously mentioned decrease of 1.39 p.c. for the previous decade; and that for the South, Eastern and Central Europeans increased 59.07 p.c. (or 63.50 p.c. if Yugoslavia is included) as compared with 15.41 p.c. between 1911 and 1921. In 1921, resident immigrants from South, Eastern and Central Europe were not only 2.44 times as numerous as immigrants from North Western Continental European countries, but in the ensuing decade they increased 1.8 times more rapidly. Among the North Western European born, absolute declines occurred only in the case of persons of French and Icelandic birth and among the South, Eastern and Central Europeans only in the case of the Austrian born. Deaths and arrested immigration would seem to furnish an adequate explanation of the first two; the decrease in the Austrian figure is largely a matter of reporting and should be associated with the large numerical and percentage increases notably for the Yugoslavs, Hungarians and Czechs and Slovaks. The passing of the post-War prejudice against enemy countries, the more general understanding of the changes in political boundaries effected by the Treaty of Versailles and the growth of national consciousness on the part of both the resident and non-resident natives of the newly formed European states, undoubtedly combined to effect a considerably more accurate statement of birthplace in 1931 than in 1921, although when reporting birth place many of the earlier immigrants still think in terms of the old political frontiers. (See later section on length of residence, p. 54.)

Turning to the linguistic groups, the increase in the numbers born in Norway and Sweden was very marked in the first ten years of the century and the Danes also came in relatively large numbers. The significant changes in the post-War decade have been the resumption of immigration from Norway and Sweden on a moderate scale and a spectacular increase in immigration from Denmark. The number of immigrants of Icelandic birth on the other hand has continued its decline. That the percentage increase for the Germanic group exceeded that for the Scandinavian during the last decade is largely attributable to the increase in the number giving Germany as country of birth in 1931. While numerically much less important, the percentage increase for immigrants of Dutch birth exceeded that for persons claiming German nativity. The outstanding feature of the Latin and Greek group (France, Greece and Italy) is the rapid growth in the first ten years of the century and the small percentage increases during the last

*Op. cit. p. 60.
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two decades. Immigration from France has ceased and while the last inter-censal period witnessed a resumption of immigration from both Italy and Greece, neither the absolute nor the percentage increases attained pre-War levels.

Before concluding this section the reader is referred to the summary given in Table XII. A vertical analysis of the columns yields some significant information. First, between 1901 and 1911 the percentage increase of persons born in South, Eastern and Central Europe was twice as great as that for resident immigrants from the north and western parts of the continent. During that decade an exceedingly high rate of increase must have obtained for the Slavs as well as for the Latins and Greeks. That period was notable also for a phenomenal increase for Scandinavian born, the rate being more than treble that for the Germanic immigrants as a group. The United States born increased about as rapidly as the North Western Continental Europeans as a whole and about two-fifths faster than the British born (British Isles and other British Possessions). In the second decade of the century the rates show heavy declines throughout. With the single exception of the Asiatics, the British-born showed the largest percentage increase; the rate of growth of the Continental Europeans as a group, fell to almost one-third the British figure and the North Western Europeans showed an absolute decline. Between 1921 and 1931 an almost complete reversal occurred. The rate of increase of the British born dropped to less than half that in the previous decade, while that of the Continental Europeans as a whole, more than quadrupled, with the result that it exceeded that for the British Isles and British Possessions by between four and five times. This increase was chiefly attributable to disproportionate expansion of immigration, particularly from South, Eastern and Central Europe, coupled with a less pronounced tendency on the part of Continental European immigrants generally to emigrate to the United States or elsewhere after arrival in Canada because of both legal and economic considerations. As has already been pointed out, the United States-born residents of Canada instead of increasing actually declined during the decade and for reasons previously discussed (see Fig. 23).

Finally, some striking comparisons emerge when the percentage changes in foreign born are compared with the rates of population growth in the country as a whole. Between 1901 and 1911, the number of foreign-born Latins and Greeks increased nearly eight times more rapidly than the total population; the foreign-born South, Eastern and Central Europeans and the foreign-born Scandinavians approximately seven times; the North Western European and United States born at about four times the average rate; the British born at almost three times; those born in Germanic and Asiatic countries showed over twice the general increase. In the next decade the rate of increase in only the British, United States and Asiatic born was as great as that of the population as a whole. For the European born as a class the rate was smaller by one-half and two of the sub-groups registered actual declines. During the last inter-censal period, the percentage increase in the British born and Asiatics dropped to two-thirds that of the total population, and that for the United States born fell to a negative quantity, while the rate of increase for the Continental Europeans rose to more than treble the figure for all Canada. Among the Continental Europeans, only the Latin and Greek group failed to maintain a rate of growth several times greater than that for the population as a whole. In this instance the figure fell to almost half the all-Canada percentage—a rather remarkable change as compared with its behaviour between 1901 and 1911.

TABLE XII.—SUMMARY OF PERCENTAGE INCREASES PER DECADE OF THE IMMIGRANT POPULATION, BY SPECIFIED GROUPING OF COUNTRIES OF BIRTH, CANADA, 1901-1931

Group of Countries of Birth	P.C. Increase		
	1901-1911	1911-1921 ¹	1921-1931
Total population.....	34.17	21.94	18.08
British Isles.....	98.65	27.47	11.10
British Possessions.....	83.99	35.03	13.81
Europe.....	222.54	13.43	55.55
Asia.....	73.65	30.99	13.00
United States.....	137.44	23.16	-7.87
North Western Europe.....	131.31	-1.39	35.29
South, Eastern and Central Europe.....	232.57	15.41	63.50
Scandinavian.....	233.04	5.81	38.96
Germanic.....	71.40	-13.61	50.85
Latin and Greek.....	266.38	6.45	10.87

¹ Changes in 1921 owing to deduction of the part of Labrador ceded to Newfoundland.

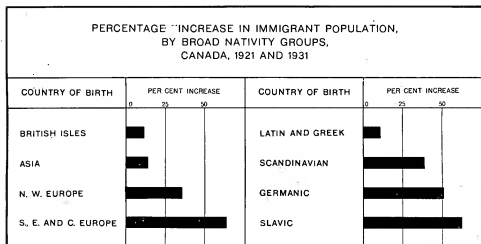


FIG. 23. During the last inter-censal decade the percentage increase in the number of resident immigrants from Asia was slightly larger than that for resident immigrants from the British Isles; that for immigrants from North Western Europe was three times and that for the South, Eastern and Central Europeans was nearly six times greater. These figures reflect differences in the volume of earlier as well as of current immigration. The United States-born residents of Canada showed an absolute decrease of nearly 8 p.c. in the ten-year period.

Numerical Importance of Recent Immigration from the Principal Continental European Countries.—Table XIII shows those countries which the largest numbers of European-born residents of Canada reported as their respective countries of birth in 1931. The Russians were the most numerous of those reported as having come to Canada before 1901. Poland (including Galicia) ranked second. Thereafter, first place went to Poland, the second usually being held by Russia except in 1921–25 when that country jumped to first place, and in the War period 1916–20 when the rapid rise of Italian immigration carried that country to the second position. Total immigration was so small during the first five months of 1931 that the drop in the relative position of Russia can hardly be regarded as significant. Taken as a whole the figures indicate that during the last generation, Poland and Russia sent more permanent settlers to Canada than any other Continental European country. Prior to her territorial reduction, Austria stood well up in the list. Between 1921 and 1925, Hungary appeared for the first time and moved rapidly forward. Czechoslovakia and Yugoslavia seem to have secured a permanent place among the leading sources of our immigration during the last half of the decade just closed. Of the Scandinavian peoples the Swedes appear among the first eight from the closing decades of last century until after the World War, and the Norwegians from 1901 to 1925. While Iceland was among the eight countries which sent the largest numbers of immigrants to Canada before 1901, it has never since reappeared in that group. Germany was third in the list prior to 1901 but has not since approached that rank, though she has consistently maintained a place except during the War period. France also ranked among the first eight prior to 1901, but since then has not appeared in that group except immediately after the War when there occurred a considerable movement to Canada of French women who had married Canadian soldiers, or who were about to do so. As in the case of Iceland the absolute importance of immigration from France has continuously declined since the beginning of the century.

Careful study of the table will show the gradual shifting of the weight of immigration from the North West of Europe and the Scandinavian and Germanic groups to the South, Eastern and Central nations and the Slavic and Latin peoples. Subsequent to 1926, there was only one North Western European country included among the leading sources of Continental immigration to Canada.

TABLE XIII.—PRINCIPAL COUNTRIES OF BIRTH OF CONTINENTAL EUROPEAN IMMIGRANTS, BY SPECIFIED PERIODS OF ARRIVAL, CANADA, 1931

Rank	Country	Rank	Country	Rank	Country	Rank	Country
Before 1901		1901-1910		1911-1915		1916-1920	
1.....	Russia	1.....	Poland	1.....	Poland	1.....	Poland
2.....	Poland	2.....	Russia	2.....	Russia	2.....	Italy
3.....	Germany	3.....	Roumania	3.....	Italy	3.....	Russia
4.....	Austria	4.....	Austria	4.....	Roumania	4.....	Belgium
5.....	Roumania	5.....	Sweden	5.....	Austria	5.....	Sweden
6.....	Iceland	6.....	Italy	6.....	Sweden	6.....	Norway
7.....	France	7.....	Norway	7.....	Norway	7.....	France
8.....	Sweden	8.....	Germany	8.....	Germany	8.....	Finland
1921-1925		1926-1930		1931 (5 mos.)		Total	
1.....	Russia	1.....	Poland	1.....	Poland ¹	1.....	Poland
2.....	Poland	2.....	Russia	2.....	Hungary	2.....	Russia
3.....	Italy	3.....	Hungary	3.....	Italy	3.....	Italy
4.....	Finland	4.....	Czechoslovakia	4.....	Czechoslovakia	4.....	Roumania
5.....	Sweden	5.....	Germany	5.....	Germany	5.....	Germany
6.....	Norway	6.....	Finland	6.....	Yugoslavia	6.....	Austria
7.....	Germany	7.....	Yugoslavia	7.....	Russia	7.....	Sweden
8.....	Hungary	8.....	Roumania	8.....	Roumania	8.....	Norway

¹ In the 1931 Census tabulations Galicia was included with Poland.

Length of Residence of Foreign Born in Canada.—Table XIV shows the length of residence in Canada of the average immigrant from each of the specified countries of birth in 1931. The median was used in computing the averages which were derived from Table 20, Volume IV, 1931 Census. A few interesting points are brought out in this tabulation and in Table 15 which presents the same data by geographical and linguistic groupings. Before proceeding to a detailed analysis of the figures it might be well to enumerate the principal factors, four in number, which contribute to the recorded differences in the averages for the several countries of birth. First, immigration from one country may have been earlier than from another. Second, the death rate among older immigrants may have been higher for one country of birth than for another. Third, in the case of certain countries of birth, a large proportion of the earlier immigrants have returned to their homeland or emigrated to some other part of the world, leaving only the more recent arrivals in Canada, while in the case of certain other countries of birth the majority of immigrants have settled in Canada for life. In the fourth place, the average number of years of residence would be increased by the slowing down of immigration in the latter part of the period. Thus, given an early start, a fairly long average life and a disposition to make Canada a permanent home, the average number of years of Canadian residence will be relatively great. On the other hand, a late start, a high mortality rate or a constant stream of emigrants returning to their native land will make for a short average length of residence and the combined influence of these factors will be intensified if immigration during the latter part of the period is very much greater than in the earlier part. Of the four influences, differences in mortality rates are probably the least important.

Turning now to the data in the adjacent tables, it is seen that the Asiatics as a group with an average residence of 19.25 years were the oldest of the 1931 survivors of past immigration to Canada, United States born stood next with an average of 18.55 years, the British born following very closely with a figure of 18.19 years. In the case of all three groups, immigration was relatively heavy during the final decade of the last and the first ten or twelve years of the present century, but has declined abruptly in recent years. The recent decline was especially marked with the Asiatics and the United States born. As was mentioned above, an absolute net emigration of United States born occurred between 1921 and 1931. The median length of residence of European-born immigrants was appreciably smaller than those of the British and United States born, being only 15.35 years. The figure for many individual European countries, of course, was much larger than 15.35. The length of Canadian residence for the average immigrant from Iceland, for example, was 31.51 years, the highest in the tables. Immigration from that country was early and virtually ceased a decade or two ago. The figure for France (21.80) was also relatively high and for somewhat similar reasons. The post-War Austria is only a fraction of its pre-War size and naturally in recent years it has been able to send only a relatively moderate stream of immigrants to Canada as compared with that from the larger Austria of earlier days. The relatively high figure of 19.50 years of Canadian residence for immigrants who claim Austrian

nativity should, therefore, be related to the very short length of residence of immigrants from the adjacent countries of Czechoslovakia (3.90 years) and Yugoslavia (3.95 years) which were created in part out of the former Austrian territory. Immigrants from the latter two European countries show the shortest average lengths of Canadian residence not only because immigration has been relatively heavy from those areas during the past decade, but also because the countries themselves are new political entities. The almost equally small figure for Hungary which, like Austria was dismembered after the War, must be explained solely in terms of heavy recent immigration. Considerable additions were made to the territory of Lithuania by the peace treaty. Immigration for that country was consequently increased in recent years and a relatively short length of 4.74 years of Canadian residence is the result. The case of Ukraine (16.03 years) is somewhat analogous to that of Austria but to a much less accentuated degree.

Territorial changes such as the above, do not enter as causal factors into the comparatively short residence of the average immigrant from certain other European countries, such as Denmark (5.28 years), Finland (6.78 years) and Holland (8.31 years). Relatively heavy recent immigration is the principal explanation of these figures. On the other hand, relatively heavy early immigration coupled with considerably reduced volume during the past decade are the chief causes of the comparatively long Canadian residence of the average immigrant from such countries as Sweden, Norway, Italy, Roumania, Russia and Spain.

Doubtless a great many causes have contributed to the eclipse of the British Isles and the United States, and the ascendancy of Continental Europe particularly Central and Eastern Europe as sources of Canadian immigration. Any complete explanation would have to take into account the influence of such factors as relative standards of living, the uneven decline of European birth rates, the effect of Canadian immigration activities both public and private, the attitude of foreign countries towards emigration, the effect of domestic and foreign trade policies and so on. Sometimes political factors are paramount, sometimes the economic, sometimes the social. An exhaustive study would involve careful analysis and weighting of the various influences affecting each individual country of birth. Unfortunately, many of the influences are incapable of quantitative measurement. Their combined effect, however, is clearly demonstrated in the foregoing tables and discussion. If immigration to Canada should again assume important dimensions and any significance attaches to its source, consideration must obviously be given to the revolutionary change of trend which has occurred during the last three decades and to the causes which have been responsible therefor.

TABLE XIV.—LENGTH OF RESIDENCE IN CANADA OF THE AVERAGE (MEDIAN) IMMIGRANT FROM SPECIFIED COUNTRIES OF BIRTH, CANADA, 1931

Birthplace	Length of Residence of Median Immigrant	Birthplace	Length of Residence of Median Immigrant
	years		years
Total.....	17.54	Lithuania.....	4.74
British born.....	18.19	Norway.....	16.34
British Isles.....	18.24	Poland.....	14.57
British Possessions.....	16.34	Roumania.....	18.54
Foreign born.....	16.69	Russia.....	17.45
Europe.....	15.25	Spain.....	16.66
Austria.....	19.50	Sweden.....	18.57
Belgium.....	14.01	Switzerland.....	9.36
Bulgaria.....	15.84	Ukraine.....	16.03
Czechoslovakia.....	3.90	Yugoslavia.....	3.95
Denmark.....	5.28	Other.....	9.75
Finland.....	6.78	Asia.....	19.25
France.....	21.50	Armenia.....	12.37
Germany.....	10.38	China.....	19.60
Greece.....	16.07	Japan.....	16.49
Holland.....	8.31	Syria.....	23.61
Hungary.....	3.98	Turkey.....	10.95
Iceland.....	31.51	Other.....	11.13
Italy.....	16.84	South America.....	16.84
		United States.....	18.55
		Other countries.....	16.22
		At sea.....	23.93

¹ Median prior to 1901; 31.51 estimate on assumption that those coming prior to 1901 came during the previous decade.

² Includes Galicia.

CHAPTER III

SEX, AGE AND CONJUGAL CONDITION

SEX COMPOSITION OF THE POPULATION OF VARIOUS ORIGINS AND NATIVITIES

For many reasons it is of value to know the relative numbers of males and females of the different racial and immigrant groups who have come from various parts of the world. This is especially true in a new country like Canada. Only in the light of the relative numbers of the sexes is it possible to arrive at an adequate understanding of the relation between origin and intermarriage, naturalization, crime, occupational and territorial distribution, the learning of the languages of Canada and many other related problems. It is also of interest to know with some precision which stocks send whole families to Canada as permanent settlers and which send large numbers of unattached men looking forward to only a few years sojourn in the country and ultimate return to the homeland. The basic facts are presented in Tables 16, 17, 19 and 20 which show the numbers of males and females and the percentage surplus of males both for the total resident population and for the adult portion of same for each race and immigrant group.

Before proceeding to a detailed analysis of the tables a few observations of a more general character might not be out of place. First, where a surplus of males is indicated, the surplus is mainly a surplus of men in the prime of life. While it is true that a slight disparity normally exists between the numbers of male and female children born in a given population, this disparity tends to be offset by compensating differences in mortality during the years especially of early childhood, so that the numbers of each sex in a group of children say 15 years of age and under tends to be approximately equal. The effect of differences in the longevity of males and females in the higher age categories is also negligible as compared with the recorded sex inequalities of the various origin and nativity groups, partly because of the small absolute magnitude of the differences in expectation of life for males and females of say 50 years of age and over, and partly because the proportion of the population in these higher age categories is relatively small as compared with the total for all ages. This is especially true of immigrant groups, and indeed of the population as a whole in a young country like Canada. Incidentally, any influence that this factor might exert would be in the direction of minimizing the recorded percentage surpluses of males. Furthermore, a surplus of young adult males (which is normally the result of immigration) tends to disappear as middle age is reached for by that time unattached immigrant males have usually either married and settled down or have returned to their native land. Clearly, then, the surpluses of males appearing in the accompanying tables are composed for the most part of persons in the years of early manhood.

Another point worthy of notice is that when the classification is by racial origin other factors tend to reduce the inequality of sex distribution with length of residence in a country. As the number of a stock increases with the birth of children the surplus males already in the population constitutes a progressively smaller percentage of the whole. Likewise, the surplus males in subsequent immigration tends to form a progressively smaller percentage of the total for it also is compared with an increasing volume of native stock of the same origin. Of course, for a time the volume of immigration may increase with abnormal rapidity as compared with the numbers of the same stock already resident in the country, but sooner or later it will constitute a decreasing percentage. The percentage surplus of males in a given racial origin, therefore, is usually smaller than that shown by the immigrant group from the corresponding country or countries of birth.

The intimate connection between immigration and the unequal sex distribution of origin groups may be seen by comparing the *change* in sex distribution of the several races, all ages, during the last inter-censal decade with the percentage increase in immigrants born in corresponding countries of birth. These figures are shown below and incidentally serve as a useful check on the findings of the previous chapter with respect to recency of arrival.*

* See Tables XII, 13 and 14.

TABLE XV.—PERCENTAGE INCREASES OR DECREASES DURING DECADE IN NUMBER OF MALES PER 100 FEMALES OF SPECIFIED RACIAL ORIGIN AND IN NUMBER OF RESIDENT IMMIGRANTS FROM CORRESPONDING COUNTRY OF BIRTH, CANADA, 1921-1931

Rank	Racial Origin	P.C. Increase (+) or Decrease (-) in the Number of		Rank	Racial Origin	P.C. Increase (+) or Decrease (-) in the Number of	
		Males per 100 Females	Resident Immigrants from Corresponding Country of Birth			Males per 100 Females	Resident Immigrants from Corresponding Country of Birth
1	Yugoslavia.....	+ 81	+380	15	German.....	+ 1	1
2	Czech and Slovak.....	+ 75	+428	16	British.....	0	+ 11
3	Hungarian.....	+ 51	+281	17	French.....	0	- 13
4	Danish.....	+ 20	+139	18	Belgian.....	- 1	+ 28
5	Polish.....	+ 10	+162	19	Hebrew.....	- 1	-
6	Finnish.....	+ 9	+150	20	Roumanian.....	- 3	+ 77
7	Swedish.....	+ 6	+ 24	21	Russian.....	- 3	+ 13
8	Norwegian.....	+ 5	+ 41	22	Syrian.....	- 8	+ 2
9	Austrian, n.o.s.....	+ 3	1	23	Italian.....	- 19	+ 30
10	Dutch.....	+ 2	+ 84	24	Japanese.....	- 52	+ 5
11	Indo-Indic.....	+ 2	- 15	25	Greek.....	- 82	+ 48
12	Indian.....	+ 2	-	26	Bulgarian.....	-253	+ 50
13	Negro.....	+ 2	-	27	Chinese.....	-292	+ 14
14	Ukrainian.....	+ 2	+ 21				

n.o.s.—not otherwise specified.

* Figures for Germany and Austria are omitted because of gross mis-statement of place of birth in 1921.

A cursory examination of the above figures shows clearly how sensitive is sex distribution to a relatively large volume of immigration. Five out of the first six origins in the list are among the newer immigration from Eastern and Central Europe and in the case of the corresponding countries of birth, seven out of the first eight appear in either the 1921-1925 or 1926-1930 lists of countries sending the largest numbers of immigrants to Canada (p. 590). Denmark because of its size has not been one of the leading sources of Canadian immigration but the recent increase in emigration from that country is reflected in the increased surplus of males. Immigration from the British Isles and British Possessions during the last decade was just adequate to maintain the male surplus in the British stocks at its previous level in the face of existing size and fertility of the resident Anglo-Saxon population. The decrease in the surplus of males despite moderately large immigration in the case of the Roumanian, Italian, Greek and Bulgarian stocks is attributable perhaps not so much to length of residence (with the possible exception of the Roumanians) as to high birth rates (see Chapter XIII).

Sex Distribution by Racial Origin.—With these general considerations in mind, attention is directed to a detailed examination of the sex distribution of the individual stocks (Tables 16 and 17).

In 1931, there were nearly 7.5 p.c. more males than females in the population of Canada as a whole, a surplus slightly larger than that recorded ten years previously. While males exceed females for every specified origin, the major inequalities occur in the case of stocks which have recently come to Canada, where immigration has been relatively great in recent years and where immigration from corresponding countries of birth shows a large surplus of males (Table 20). Conversely, the numbers of the sexes are more nearly equal in the case of races of long Canadian residence, with relatively small recent immigration, with small sex disparities among immigrants from corresponding countries of birth and with high birth rates. With certain minor exceptions Table 16 tells a similar story to the corresponding tabulation for 1921. Figures for the geographical and linguistic groups appear in Table XVI for both 1921 and 1931. It is seen that the relative position of the various groups of origins was precisely similar at the two census dates and that immigration during the decade increased the surplus of males for each of the groups of foreign stocks except the Latin and Greek. As was pointed out in Chapter II immigration from Italy, Greece and Roumania has declined both relatively and absolutely in recent years. To this fact, together with the arrival during the post-War decade of large numbers of wives and fiancées of earlier immigrants from Italy and Greece and the generally high level of birth rates among the married women of those nationalities, is attributable the falling off in the percentage surplus of males for this group of origins.

TABLE XVI.—PERCENTAGE SURPLUS OF MALES FOR SPECIFIED GROUPING OF RACIAL ORIGINS, CANADA, 1921 AND 1931

Racial Origin Group	P.C. Surplus of Males		Racial Origin Group	P.C. Surplus of Males	
	1921	1931		1921	1931
British.....	5	5	Scandinavian.....	31	38
French.....	1	1	Germanic.....	9	10
North Western European.....	15	17	Latin and Greek.....	51	33
South, Eastern and Central European.....	25	32	Slavic.....	22	29

A comparison of Tables 16 and 17 shows that the percentage surplus of males in the immigrant population of Canada is approximately four times greater than that for the population as a whole. Moreover for every race, with two minor exceptions*, the surplus of males is larger and in most cases materially larger, for the foreign-born than for the Canadian-born portion of the stock. Approximately 78 p.c. of the surplus of males in the population is chargeable to immigration. The balance in the main is explained by the larger percentage of females included in the net emigration of Canadian born during the decade, particularly to the United States.†

A much clearer idea of the differences in the sex distribution of the resident immigrant population of the various races is obtained when the percentages in Table 17 are arranged in order of rank.

TABLE XVII.—MALES AS PERCENTAGE OF FEMALES IN IMMIGRANT POPULATION, BY VARIOUS RACIAL ORIGINS, ARRANGED ACCORDING TO RANK, CANADA, 1931

Rank	Racial Origin	Males as P.C. of Females	Rank	Racial Origin	Males as P.C. of Females
1	Chinese.....	3,900	15	Ukrainian.....	150
2	Bulgarian.....	364	16	Russian.....	148
3	Yugoslavian.....	353	17	Negro.....	138
4	Greek.....	276	18	Syrian.....	135
5	Czech and Slovak.....	256	19	Belgian.....	132
6	Danish.....	203	20	Finnish.....	132
7	Hungarian.....	193	21	Dutch.....	129
8	Swedish.....	191	22	German.....	129
9	Romanian.....	187	23	British.....	112
10	Japanese.....	184	24	Indian.....	106
11	Italian.....	172	25	Hebrew.....	102
12	Norwegian.....	165	26	Icelandic.....	100
13	Austrian, n.o.s.....	164	27	French.....	98
14	Polish.....	163			

After all due allowance is made for inequalities in length of residence which were discussed in the previous chapter, genuine differences of no mean magnitude in the sex distribution of the immigrant sections of the various stocks remain. Certain origins tend to migrate as families and their sex distribution is more or less evenly balanced. With others emigration consists largely of unattached males, i.e., of males without dependents, in this country at least. Of course as they stand, the figures reflect such differences in racial tendencies in only a very rough and ready manner.

The data in Tables 16 and 17, however, do describe the existing sex distribution of the individual origins and the immigrant portion of those origins with complete accuracy and this in itself is important. If a surplus of males represents a floating population which will never settle down and which expects to return to the motherland after having made a competence, Canada derives comparatively little benefit from such immigration and incurs the risks of having in the population a large body of more or less nomadic males who are not likely to feel the same obligations or loyalty to the country as do men who, with their families, make permanent homes here. If the surplus of males, on the other hand, consists of men who in due course marry into the popu-

*The two exceptions are the French and Icelandic races. The fact that the immigrant born of French extraction show a small deficiency in males is probably accounted for by a slight predominance of females among the descendants of earlier French-Canadian emigrants returning from the United States. Immigration from Iceland also shows a slight surplus of females (Tables 19 and 20) which was adequate to offset all but 21 of the surplus males in the sex distribution of the race as a whole.

†Hurd, W. B. and Cameron, J. C.: *Population Movements in Canada, 1931-31 — Some Further Considerations*, The Canadian Journal of Economics and Political Science, Vol. I, No. 2, May, 1935, p. 240.

lation already in the country or are merely getting established before bringing their wives and families to the new land, the case is entirely different. In any event the presence of such a surplus and its magnitude go far to explain many differences in the social behaviour of the different stocks in Canada.

Before concluding this section, reference should be made to Table 18 which makes available the sex distribution of the adult population by racial origins and offers definite statistical proof of the thesis previously supported by deductive arguments that the surplus of males in the different origin classifications consists largely of adults. Comparison with Table 16 shows that 87.4 p.c. of the excess males in Canada in 1931 were 21 years of age or over. For the non-British and non-French origins—i.e., for foreign stocks—adults accounted for as much as 97.2 p.c. of the surplus and for the French, 114.0 p.c. indicating a slight shortage of males under 21.* Even for persons of Anglo-Saxon origin approximately two-thirds (65.8 p.c.) of the numerical inequality of the sexes is attributable to persons 21 years and over.† Frequent use will be made of these data in subsequent chapters of this monograph.

Sex Distribution by Country of Birth.—Table 19 shows the numbers of males and females in the immigrant population by country of birth and the percentage surplus of males over females for each nativity. Table XVIII presents the same data by geographical and linguistic groups of nativities for 1921 and 1931. Table 20 gives the same information as Table 19 but for the population 21 years of age and over only.

In view of the preceding discussion of the sex distribution of the immigrant population by racial origin no lengthy discussion nor explanation of Table 19 is necessary. Table XVIII serves to illustrate the net effect of immigration, emigration and deaths during the decade on the sex distribution of the various nativity groups in Canada's immigrant population. On the whole the surplus of males increased somewhat in the ten-year period. While the sex distribution of resident immigrants from British countries remained unchanged, the surplus of males among the foreign born increased appreciably. The increase was most marked for the North Western Europeans as a group, being notably large in the case of the Scandinavians (the Icelanders excepted). The South, Eastern and Central Europeans and those from Slavic countries also showed moderately larger proportions of males in 1931 than in 1921 but the surplus declined for the Latins and Greeks for reasons already explained. The influence of the net emigration of United States born to which reference was made in an earlier chapter is reflected in the closer approximation to equality of the sexes among the remaining immigrants from that country. Apparently the net exodus of United States born contained a larger percentage of males than of females.

TABLE XVIII.—PERCENTAGE SURPLUS OF MALES FOR IMMIGRANTS, BY SPECIFIED GROUPING OF COUNTRIES OF BIRTH, CANADA, 1921 AND 1931

Group of Countries of Birth	P.C. Surplus of Males		Group of Countries of Birth	P.C. Surplus of Males	
	1921	1931		1921	1931
Total Immigrants.....	25	29	Scandinavians.....	75	110
British.....	14	14	Germanic.....	33	51
Foreign.....	40	46	Latin and Greek.....	88	72
North Western Europe.....	50	75	Slavic.....	38	47
South, Eastern and Central Europe.....	46	53	United States.....	11	3
			Asia.....	635	519

It was shown earlier in this chapter that immigration was responsible for about 78 p.c. of the sex inequality of the population of Canada as a whole. A comparison of Tables 19 and 20 shows conclusively that sex inequality among *immigrants* is confined largely to adults. Approximately 96 p.c. of the surplus males in the total immigrant population of Canada in 1931

*A shortage of males (or surplus of females) appears to occur in the immigrant French population under 21 years of age. This shortage is probably associated with a slightly larger percentage of females than of males in the return movement to Canada from the United States of the descendants of earlier French-Canadian settlers in the latter country. A surplus of females characterized the reverse movement (which was largely Anglo-Saxon) across the southern border between 1921 and 1931.

†That adults accounted for a smaller proportion of the surplus males with the Anglo-Saxons than with other origins is attributable to a number of causes among which might be mentioned the settlement by interested organizations of considerable numbers of 'teen-age boys from the British Isles for the most part in rural Canada, and the relatively heavy emigration of native-born Anglo-Saxons to the States. The latter movement was confined largely to adults and was more general among females than among males. See reference in footnote*, p. 594.

were over 21 years of age. Under such circumstances it is only to be expected that the surplus of males for the adult immigrant population would exceed that for the immigrant population all ages, and the same condition would obtain for nearly every country of birth. There are only two exceptions to the rule, *viz.*, England and South Africa. In the latter case the figures are so small that the slight discrepancy might well be merely an accidental variation of no significance. The case of England is peculiar. In recent years there has been a definite effort on the part of official and other agencies to send English boys to Canada, especially to the farms and apparently the movement has been sufficient to bring about a slightly larger percentage surplus of males among young immigrants from England than obtains in the adult immigrant population from that country. This, however, is an exceptional situation and in no way invalidates the general statement that the surplus of males in an immigrant population is, as will be shown in the next section, a surplus of adults, for the most part in the prime of life.

THE AGE DISTRIBUTION OF THE POPULATION

Just as an individual at one age is radically different in disposition, capacity and outlook from what he was at an earlier or will be at a later age, so a population differs materially with the changing age distribution of the people who compose it. A people with unduly large numbers in the prime of life has characteristics which are much less pronounced in a population with large numbers of small children or with a considerable proportion of men and women above middle age. In making comparisons, then, between different population groups with regard to social or anti-social behaviour, the age distribution is an important factor which must be reckoned with before valid conclusions can be reached.*

Thus age distribution is important from two points of view. First, it is necessary as a means of correcting crude data before comparing two sections of a population of entirely different age structures, in respect to a given characteristic. For example, before legitimate comparison is possible, crude statistics of crime for the Canadian born and foreign born must be adjusted for age. Crime is far more frequent at certain ages than at others, and allowance must be made when one group has an unduly large proportion of its numbers at the ages when criminal tendencies are most marked. Such corrections may be made with a great degree of accuracy, and that specific problem is dealt with in detail in a subsequent chapter.

The second way in which age statistics are valuable is in helping to explain such differences in the behaviour of two sections of the population as may be attributed solely to the absence of people of other ages in normal proportions. Twice as large a proportion of men between 20 and 40 years of age will mean a larger amount of crime in the community merely because of the numerical addition of a large percentage among whom the crime rate is greater. But the simple numerical correction would not be enough to account for the amount of crime which would actually occur in such a community. The mere fact of age distribution tends to increase the criminality of each one of those surplus men by reducing the influences combating crime emanating from the presence of numbers of younger and older people in a neighbourhood. Unfortunately the influence of this last aspect of age distribution is very difficult of measurement, but that its existence is real can not be doubted.

Age Distribution and Nativity.—Table 21 shows the percentages of each sex found in specified age groups for the total population in Canada and the three broad nativity groups which compose it. Fig. 24 presents the same data in graphic form.

A glance will reveal great differences as between the first two and the last two charts. The chart for the total population is a composite diagram of which the other three form the component parts, and since our object is the making of an analysis, attention is focussed on the latter three.

Among the Canadian born, between 31 and 32 p.c. of the population was under 15 years of age in 1931. Of the British born only 4.92 p.c. of the males and 5.41 p.c. of the females were in this category and among the foreign born 7.06 p.c. of the males and 9.74 p.c. of the females. Thus on June 1, 1931 the Canadian-born section of our population had a four times larger proportion of children under the age of adolescence than had the foreign born, and six times larger than that for the British born. This is the first outstanding point of difference between the age distribution of the native Canadians and that of either the British or the foreign born.

*See 1931 Census, Vol. I, Chap. III.

**AGE AND SEX DISTRIBUTION OF THE POPULATION OF CANADA,
BY BROAD NATIVITY GROUPS,
1931**

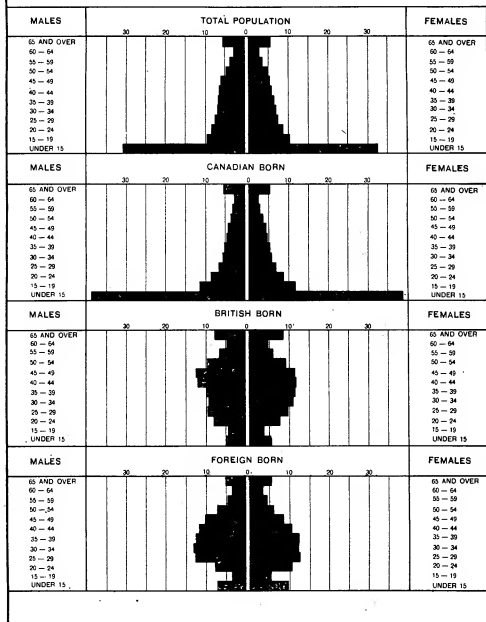


Fig. 24

FIG. 24. Among the more important factors contributing to the radical differences in age distribution as between the native Canadian and the immigrant sections of our population is the fact that a migrating population almost invariably includes abnormally large numbers of adults, and the circumstance that Canadian-born children of immigrant parents are native Canadians. To explain, however, is not to alter the significance of the recorded differences. They are of paramount importance in interpreting all summary statistics describing the social behaviour of these broad nativity groups.

To compensate for the small percentage of children among the immigrant population, both the British and foreign born show proportions very much larger than the Canadian born in the age groups 25 to 55. Indeed in all groups above 25 years the percentages both male and female for the British born are larger than for the Canadian born and the same holds true for the foreign-born males except at very advanced ages and for foreign-born females in all age categories over 20. After 55 years of age, however, the differences are not so great as in the preceding adult age groups.

Thus the immigrant population, while marked by a smaller percentage of children, has the second important characteristic of an abnormally large proportion in the most active years of adult life. Such a condition is reflected in the outlook and enterprise of a population group, and is of equal importance with the comparative paucity of children in explaining many phases of life in those districts where considerable proportions of the population are new Canadians who have recently arrived from abroad and as yet have not raised families in this country. Enterprise may be directed to social or anti-social ends. A balanced population in respect of the proportion married and having families tends to keep the activities of adult manhood and womanhood in social channels. A population unbalanced in respect to age distribution, while capable of phenomenal progress when its energies are directed along constructive lines, is peculiarly subject to anti-social action and may become a serious menace to the body politic of which it forms a part.

When attention is turned from the significance of abnormal age distribution to its causes, greater difficulties are encountered. The first fact that should be kept clearly in mind is that the Canadian-born children of immigrant parents are native Canadians and as such are included with the Canadian born. This is probably the greatest single factor contributing to the abnormally large proportion under 15 years of age in the latter group and for the correspondingly smaller percentages of adults. Were the Canadian-born children of immigrant parents included in the same nativity category as their parents, the differences in age distribution of the several groups would be much less marked. Nevertheless, differences would exist. The age distribution of immigrants is quite different from that of a non-migrating population. Immigrants usually include a large percentage of adults in the prime of life; old persons seldom migrate to a new country. Many are young and unmarried, particularly the men, and the married persons usually migrate during the early years of married life and rear a large proportion of their children on the soil of the adopted country. The passage of the pre-War peak of immigration and the failure thereafter of the incoming stream to approach that high point also contributes to the small proportion of children among the resident immigrant population and the correspondingly large proportion of adults. Moreover, the earlier immigrants are yearly passing into the higher age categories, a fact which in itself tends to reduce the proportion that newly arrived immigrant children are likely to constitute of the immigrant population as a whole.

The combined effect of this ageing process and the general decline of immigration from the pre-War peak is demonstrated when the figures for 1931 are compared with those for the preceding census.* Between 1921 and 1931 the proportion of British-born males 40 years of age and over increased from 41 p.c. to 54 p.c., and that of the females from 38 p.c. to 51 p.c. A similar change took place in the age composition of the foreign born. For the males the proportion rose from 34 p.c. to 43 p.c. and for the females from 29 p.c. to 38 p.c. Conversely, the proportions under 40 were smaller for both nativities and for each age and sex group with one important exception, viz., British-born males 20-29. In the case of the British-born males the apparent increase in the proportions in the latter category in 1931 was really attributable to an abnormal deficiency in 1921 as a result of heavy war casualties.

The diagrams reveal another type of difference—a difference between the age distribution of males and females. The normal distribution is for males to be slightly in excess of females in early childhood. The high mortality rate among male children tends to even up the proportions before the adult age is reached. Then from 20 to 45, owing to higher mortality among women during the child-bearing period, the proportion of men is usually greater than that of women.

* *Origin, Birthplace, Nationality and Language of the Canadian People*, Table 39, p. 78.

Now, among those of Canadian birth, the proportions at the respective ages are very nearly equal, and in that respect the age distribution tends to be closer to the normal than in the case of the British or foreign born. With the Canadian born such departures from normal as occur would seem to be capable of explanation in terms of war casualties and emigration (particularly to the United States). For the British and especially the foreign born, the divergences are much larger. One of the reasons is purely mathematical. When the number of women in a population is appreciably smaller than that of men, the female children will tend to form a larger percentage of all females than will the male children of all males, the numbers of children of each sex being roughly equal. This is probably a major explanation of the behaviour of the figures for the foreign born—this coupled with the disproportionately large number of single adult males in an immigrant population. The same applies to the British born but with that nativity the situation is seriously complicated by war casualties and emigration which is more or less indeterminate.

As in 1921, a five-year age lag in the largest female age group behind that of the largest male appears for both the British and foreign born and is quite in accordance with expectation. The average age of husbands is normally higher than that of wives for married persons of all countries. Where unmarried male immigrants send back home for their fiancées, the same age differential would occur.

There is one other point of interest presented in the charts. The largest percentage of men of foreign birth was in the age group 30 to 34, while the largest percentage of men of British birth appeared in the group 45 to 49. The highest percentage of women immigrants from foreign countries was in the age group 25 to 29, while the largest percentage of women of British birth appeared in the age group 40 to 44. The explanation seems to be that on the average the British immigrants arrived in Canada at an earlier date than the foreign born. The differences are largely a matter of recency of immigration.

Age Distribution of the Different Stocks in Canada.—Table 22 shows the percentages of the principal stocks in Canada by specified age groups. In the previous subsection attention was focussed on the ages of the population by broad nativity groups, and especially on the foreign-born section of our population. Detailed age data for the foreign born by countries of birth were not directly available, but it has been possible to compile the present origin table showing the percentages for each stock under 10 years of age, between 10 and 20, and 21 years and over. Much useful information is contained in this table though only a partial analysis can be attempted here.

In the first place there is a wide variation in the percentages. From the Chinese with less than 6 p.c. of their number under 10 years of age and the Finnish, Lithuanian, Hebrew, Scottish, Yugoslavic, Czech and Slovak and Swedish with from 13 to 19 p.c., to the Japanese, Indian, Bulgarian, Roumanian, Greek, Italian, Russian and French with between 26 and 29 p.c. in that age group, is an exceedingly wide spread. Similar differences appear in the other age classes. Now, variation in age distribution as between different sections of the population is exceedingly significant. That was pointed out in the foregoing discussion of *nativity*, but there is this difference when dealing with similar data for the respective *stocks*, viz., that when age distribution for a given stock is abnormal, the unusual distribution applies to a more or less homogeneous section of the community and not merely to the Canadian-born or the foreign-born portion of a stock. When the nativity groups composing a given stock are combined, as they are under ordinary conditions in real life, the resulting population may constitute a fairly normal group in respect to age distribution. Table 22 shows very clearly, however, that this frequently does not occur. With many stocks in Canada, the combined influence of immigration, emigration, sex distribution, birth rate and death rate has resulted in quite unusual age groupings. In a great many cases the population of a given origin forms a very definite section within the community, and what has been said regarding social behaviour and abnormality in age distribution has considerable point when it is shown that such differences actually do exist in quite distinct population groups.

Table 23 arranges the stocks according to linguistic groups and gives the percentages of each stock and the percentage for each linguistic group in the three specified age classes. Of all peoples of European derivation the British as a group show the lowest proportion below 10 years of age and the highest in the group 21 and over. There are, however, a few isolated individual

origins which have lower percentages in the earlier ages. The Chinese is, of course, an extreme case. In 1931, there were twelve and a half Chinese males for every Chinese female in Canada. With all other stocks in this category except the Hebrew, the small proportions of young children are associated with relatively heavy recent immigration among which males preponderated to an unusual degree. The Scandinavians have a little higher proportion than the Anglo-Saxons in the earlier age group; they in turn are followed by the Germanic group, then the Slavic and finally the French and Latin and Greek who have the largest proportions of all. Such lack of uniformity as exists between the individual races within the respective linguistic groups may generally be explained in terms of date of immigration and sex distribution.

Where unusually high proportions under 10 years occur the principal explanation is of course high fertility. This subject will be dealt with in Chapter XIII using data from which extraneous influences have been eliminated. The present purpose is merely to draw attention to the wide differences in age distribution of the various origins which go to make up our Canadian population and to suggest some of the more obvious implications.

CONJUGAL CONDITION

Conjugal Condition and Racial Origin.—The 1931 Census tabulations make possible for the first time a study of the conjugal condition of the individual races which go to make up the Canadian population. Table 24 shows the conjugal condition of males and females 15 years of age and over for individual origins and Table 25 supplements these figures with information regarding the age distribution of single females.

The census takes cognizance of four conjugal conditions, *viz.*, single, married, widowed and divorced, and a casual perusal of Table 24 suggests the advisability of certain preliminary and more or less general comments before proceeding to a more careful analysis of the data. In the first place, it is immediately apparent that the proportion of the population (15 years of age and over) divorced is still very small—about one-tenth of 1 p.c. The proportions vary from 0.02 for the French to 0.24 for the Scandinavian males. The reasons for these variations have to do not only with differences in racial *mores* (especially religion) but also with differences in age and sex distribution which in turn are influenced by the sex distribution of immigration and length of residence in Canada. It is possible that differences in occupational and rural and urban distribution are also considerations of some importance. The quantitative isolation and measurement of these factors would be extremely difficult, if not impossible, and in any case the proportion of the population concerned is so small as to be negligible. Passing on to the widowed, although the percentages are sufficiently large to be of real significance, a cursory examination suggests that here too certain special influences are at work which are not subject to convenient measurement. For example, war casualties contributed to an appreciable extent to the high percentage of Anglo-Saxon females widowed, while in certain cases heavy maternal mortality undoubtedly was an important factor contributing to the high proportions of widowed males.

The bulk of the population is included in the other two classes. The married and single combined account for 95.7 p.c. of the males and 91.4 p.c. of the females. While the married females outnumber the single by a large margin in every race, and the same is true generally of the males, it is the proportion single, *i.e.*, the proportion which has never married which best reflects the difference in conjugal condition and is least affected by extraneous influences incapable of precise measurement.

Turning now to Table 24 one finds that materially larger proportions of males than of females are unmarried in the case of every origin for which data are available. For the population as a whole the percentage of males single was 40.93 p.c. as against 34.01 p.c. of the females, a proportion some 20 p.c. greater. The main explanation of this phenomenon is of course, the presence of large numbers of surplus males in the population of Canada. At the last census there were in the Dominion one hundred and twelve males per hundred females 21 years and over (see Table 18).

Differences as between the several races also appear in the proportions who have never married. For the males of the white races the range lies between 31.86 p.c. for the Czechs and Slovaks and 54.4 p.c. for the Scandinavians; and for the females between

12.24 p.c. for the Hungarians and 39.67 p.c. for the French. Such data, however, have significance only in so far as one may be interested in the existing conjugal condition of the several origins or in relating such data to other social characteristics; such as for example, crime or unemployment. They tell us nothing as to *why* the rates differ.*

In pursuing the latter aspect of the analysis attention is focussed on the females and for purposes of illustration the following data are taken from Table 25 which shows the percentage females unmarried, by racial origin and specified age groups, and from census tabulations on sex distribution of adults used earlier in the present chapter.

TABLE XIX.—PERCENTAGES OF FEMALES SINGLE, BY AGE AND BROAD RACIAL ORIGIN GROUPS, WITH NUMBER OF ADULT MALES PER 100 ADULT FEMALES, CANADA, 1931

Racial Origin Group	Age Group						No. of Adult Males per 100 Adult Females
	15-19	20-24	25-34	35-44	45-64	65 and over	
	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	
French.....	95.74	66.80	30.12	15.65	11.62	11.05	103
British.....	95.38	65.34	27.34	13.20	11.00	11.00	105
European.....	93.32	53.31	15.81	5.55	4.48	4.73	142
Asiatic.....	93.76	44.44	7.57	1.84	1.60	1.30	660

The above figures serve to illustrate two important facts: first, that the percentage of females single varies radically as between the several age categories, the proportions falling to fractions of their initial value in passing from the 15-19 age group to the 65 and over category; and second, that, with one minor exception in the highest age group, the origins with the larger surpluses of males show smaller percentages of unmarried females in all age categories. It follows, therefore, that if it is desired to discover the extent to which races differ in the matter of propensity to marry or remain single the influence of the more or less accidental and extraneous influence of age and sex distribution must be eliminated before any intelligent comparison is possible.

Before proceeding with that phase of the analysis, there is one important fact that may be demonstrated directly from the figures under review. If one takes the Anglo-Saxon females as standard and subtracts from the proportions single in the respective age classes the proportions single in the corresponding age categories of the numerically more important foreign races the following results are obtained:—

TABLE XX.—DIFFERENCES BETWEEN PROPORTIONS SINGLE FOR BRITISH FEMALES AND FOR FEMALES OF TYPICAL FOREIGN ORIGINS, BY SPECIFIED AGE GROUPS, CANADA, 1931

Racial Origin	Age Group				
	20-24	25-34	35-44	45-64	65 and over
	p.c.	p.c.	p.c.	p.c.	p.c.
European.....	12.03	11.53	7.62	7.12	7.17
Asiatic.....	20.90	19.77	11.36	10.00	10.60
German.....	8.94	7.61	4.20	4.22	5.49
Scandinavian.....	6.75	7.64	6.95	7.91	7.59
Ukrainian.....	27.98	21.99	12.11	10.83	11.16
Hobrow.....	-8.89	5.94	10.42	10.22	10.55
Dutch.....	6.77	6.35	3.57	4.18	5.61
Polish.....	29.83	17.44	10.57	9.59	9.82
Italian.....	18.07	18.00	10.93	9.15	9.15
Russian.....	19.84	14.60	9.60	10.05	10.29

The meaning of the above tabulation may be illustrated by reference to the figures of the foreign European races as a group. Take the age group 20-24. The females of these races as a whole showed only 53.31 p.c. who had not married as against a figure of 65.34 p.c. for the British, or 12.03 fewer per 100. Or put conversely, 12.03 p.c. more of the females of European extraction between 20 and 24 had married than in the case of the Anglo-Saxons in the

*For a discussion of general changes in conjugal condition since 1871 and further discussion of the conjugal condition of males in particular, see the Introduction to Chap. IV, Vol. I, 1931 Census.

same age category. For the age group 25-34, the disparity was only 11.53 p.c.; for those between 35 and 44, only 7.62 p.c. and so on. In other words, the excess is greater in the earlier age groups and declines with marked consistency as the age increases, which simply means that foreign European origins as a group marry younger than the basic Anglo-Saxon stock of the country. What applies to the group as a whole applies to an even more marked degree to races like the Ukrainian, Polish, Italian and Russian, whose original habitat was in Southern and Eastern Europe and who as population groups are among the more recent arrivals on this continent. The disparity decreases with the Germans, Dutch and Scandinavians and other Western European races containing smaller proportions of immigrants. The case of the Hebrews is peculiar. Not only do a smaller percentage of their females marry than of the British but they actually marry at a later age. It is understood that the latter characteristic is associated with a marked sense of filial responsibility which frequently expresses itself in postponed marriage on the part of the young, to permit an early retirement of the parent from active business life. The age group 15-19 was omitted from the above tabulation because the legal age of marriage without parents' consent in Canada is 18 years. The percentage married in the 15-19 age group would not be strictly comparable to those in the higher categories where legal limitation to the age of marriage is not a consideration.

Reverting now to the problem of measuring and eliminating the influence of age and sex distribution on the differing proportions of the females of the several racial origins who have failed to marry, the degree to which the age distribution of the females of each race was more or less favourable to marriage than that of the population as a whole was computed by applying the specific rates of single females for the total female population to the percentage age distribution of the race concerned and expressing the expected rate for the females of the race (all ages) as a percentage of the rate for the females of the population as a whole (all ages). Since the specific rates for the total population were used as standard, the expected rates for the individual races differed from that for the population as a whole merely because of greater or less favourable age distribution. The percentages obtained by this indirect method serve as an index either for directly eliminating the influence of age from the crude figures or for measuring the relative extent to which differences in age distribution contributed in conjunction with other factors to the variation in the proportions unmarried of the several origins. The significant sex ratio is the surplus males per 100 females 21 years and over. The method of multiple correlation was used and an initial coefficient of $R = .70$ was obtained. The resulting regression equation (or equation of average relationship) was as follows:—

$$X_1 = .0612 X_2 - .0770 X_3 + 27.96 \quad (1)$$

where X_1 = the proportion of females 15 years and over who had not married by June 1, 1931;

X_2 = index of age distribution from standpoint of degree of favourableness to having a high percentage unmarried;

X_3 = surplus males per 100 females (21 years and over).

The above equation indicates that an increase of one in the index measuring the degree of favourableness of age to the unmarried state would on the average raise the expected percentage of females single by .0612 points, while an increase of one in the number of surplus males per 100 females would lower the expected proportion by .0770 points. Of course, the chances of a unit change are by no means equal in the two cases. A more definite idea of the actual importance under existing conditions is obtained by substituting the standard deviations of X_2 and X_3 in the regression equation. When this is done it is found that fluctuations which actually occurred in sex distribution had, on the average, an influence on the fluctuations in the proportions of females unmarried over four and a half times greater than had differences in age distribution. Their relative importance was approximately as nine to two with the percentage surplus males the dominant factor. The findings thus far are quite in accordance with expectation.

In estimating the combined importance of the independent variables in accounting for fluctuations in the dependent series, accepted usage attributes to them an aggregate weight equal to the square of the coefficient of correlation obtained, which in this case comes to just under 50 p.c.* An attempt, therefore, was made to raise the correlation by the introduction

*Technically speaking they account for 50 p.c. of the variability which is a function of the square of the deviations from the arithmetic mean of the dependent series. One reason why the coefficient was not higher is that with a good many immigrant stocks the surplus males includes large numbers of married men with wives still in the homeland. Such are, of course, ineligible for marriage to single females in this country. See 1931 Census, Vol. I, Introduction to Chap. IV and subsequent correlation.

of additional factors. After considerable experimentation three other variables were selected, viz., (1) the percentage of males (15 years and over) single, widowed or divorced, as representing the supply of eligible males, (2) the ratio of the number of males (15 years and over) single, widowed and divorced to the number of unmarried females (15 years and over) and (3) the percentage of females (10 years and over) illiterate. These together with the expected values of X_1 as computed from equation 1 above were correlated with the original X_1 and the coefficient was raised to $R = .95$. The resulting regression equation was as follows:—

$$X_1 = 85.9250 - 1.835 X_2 + .6189 X_3 - .1292 X_4 + .1036 X_5 \quad (2)$$

where X_2 = the predicted values of X_1 on the basis of existing age and sex distribution;

X_3 = the percentage of males (15 years and over) single, widowed or divorced;

X_4 = the ratio of males (15 years and over) single, widowed and divorced to unmarried females of the same race (15 years and over);

X_5 = the percentage of females (10 years and over) illiterate.

Squaring the coefficient of $R = .95$ one finds that the five independent variables in the correlation accounted for slightly over 90 p.c. of the variability in the percentages of females in the several races who had failed to marry. It now remains to examine the direction and relative importance of the influence of the independent factors as shown in the prediction equation 2.

X_2 , being the predicted values obtained from equation 1, reflects the combined influence of age and sex distribution. The direction of their separate influence on X_1 was discussed above and inasmuch as the size of the surplus of males was at once the dominant factor and negatively related to X_1 it is quite in accordance with expectation that it should impose its sign on the new X_2 in equation 2. Passing to X_3 and X_4 , it appears rather strange at first glance that, other things being equal, where eligible males (i.e., single, widowed and divorced) constitute a large proportion of total males the proportion of unmarried women may be expected to be high while where the number of eligible males per 100 single females is large (other things being equal) the proportion of women unmarried may be expected to be low. No difficulty is encountered of course with the X_4 . The equation simply means that where there is a large surplus of eligible males relative to eligible females of the same race competition for females will be keen and few will be found single. But this only obtains as long as other influences do not intervene to prevent it. The question immediately arises as to what extraneous cause might retard marriage of eligible males and females alike and bear down on the several racial groups with different weights. The answer seems to be the depression. By the date of the 1931 Census, the depression had existed for over a year and a half. The study of occupations and unemployment in Chapter XII (and in a special census monograph* on the subject) reveals that the burden of unemployment up to that date at least, fell most heavily on occupations in which immigrants are largely represented and that it increased with the recency of arrival of the immigrant. Such being the case it stands to reason that in the case of races with large proportions of males in exposed occupations and with relatively large numbers of recent immigrant arrivals, marriage of both males and females was unduly retarded so that *other factors being equal*, a large proportion of unmarried males might be expected to be positively associated with a large proportion of unmarried females of the same origin. If this reasoning be correct, X_3 would seem to be, in effect, an index of economic eligibility or capacity in relation to marriage. Where the economic status of the group is relatively unfavourable large numbers of females (and males) will be unmarried; where it is favourable the reverse will be true—always postulating of course, that other factors remain constant.

The negative relation between X_1 and X_5 means that, other things being equal, the larger the proportion of females illiterate, the smaller will be the proportions unmarried. This seems reasonable enough, however unfortunate it may seem. The findings on this point are supported by those of Mr. M. C. MacLean, in his monograph on Illiteracy. (See *résumé* in Chapter X of this monograph). To the illiterate female few alternative vocations to marriage are open with the result that those population groups showing large proportions unable to read (or write) and by inference characterized by low educational status generally, tend to show larger proportions of their females married than other groups which have made better use of existing educational facilities.

*See 1931 Census Monograph *Unemployment* by M. C. MacLean, A. H. LeNouvel, W. C. Tedford and N. Keyfitz.

Turning now to the *relative* importance of the different independent variables, when the standard deviations were substituted in the equation as above, one obtains the following weights as compared with that of $X_2 = 100$. (See also Fig. 25.)

RELATIVE SIGNIFICANCE OF THE FOUR VARIABLES IN THE PREDICTION

Variable	Weight
X_2 (age and sex combined).....	100
X_1 (percentage of eligible males to all males).....	58
X_3 (illiteracy).....	15
X_4 (ratio of eligible males to eligible females).....	4

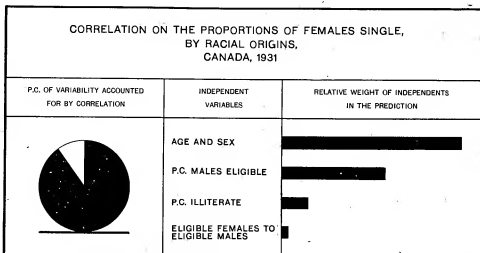


FIG. 25. The fact that 90 p.c. of the variability is accounted for by extraneous factors included in the correlation, suggests that, though marked differences occur in the proportions of females who have not married, no significant difference occurs in the *propensity* to marry given favourable conditions. Sex distribution is several times more important than age in explaining fluctuations in the proportions single.

It would appear from the foregoing that the determining factors in explaining the differences in the proportions of females in the several races who were unmarried on June 1, 1931, were sex and age distribution—more especially sex distribution—and economic status in relation to the customary standard of living of the group. In a good many cases the latter reduces itself to simple economic capacity to support a wife, the latter being lacking more particularly among races especially exposed to depression conditions whether because of recent arrival in this country or because of heavy representation in occupations peculiarly subject to unemployment during periods of economic stress.

The actual proportions of females single, the expected and the actual as percentage of the expected for the several races are shown in Table XXI. It will be noted that the actual differed from the expected by over 5 p.c. in only four out of the nineteen cases. With the Belgians, the percentage of females single was 6 p.c. below expectation while with the French, the Hebrews and the Hungarians it exceeded expectation by 8, 9 and 10 p.c., respectively. One can only hazard a guess as to why these should be the races where departure from normal was most marked. The fact that the Hungarians are the most recent arrivals of all the races included in the correlation may account in part for the abnormally large excess of single females. They too, are one of the smallest races numerically. This circumstance when associated with rather marked social barriers to intermarriage with the basic stocks of the country may have contributed to the result by effectively limiting the chance of females of the race meeting eligible and congenial males. Collateral studies on the decline in the birth rate have drawn attention to the occurrence of an abnormal increase in delayed marriage among the French in Canada during the last inter-censal decade, as compared for instance with that for the Anglo-Saxon population. This difference appears after allowance is made for age. The reasons can only be surmised.

The abnormal arresting of marriage among Hebrew females may be associated with the outstanding sense of filial responsibility for the economic support of the parent to which reference was made earlier in the chapter, coupled with certain peculiarities of occupational distribution which further accentuated the sensitiveness of the group to changing economic conditions.

Whatever be the explanations of the individual departures from normal expectation, the fact remains that they were few and in no case very significant. The importance of the present study attaches to the generalized relationship which was derived from the correlation analysis and the high degree of association between the marriage of females and the independent variables. There seems little doubt that the nature of the association is in the main causal.

TABLE XXI.—ACTUAL PROPORTIONS OF FEMALES SINGLE, THE EXPECTED PROPORTIONS ON THE BASIS OF THE ADJACENT PREDICTION EQUATION, AND THE ACTUAL AS A PERCENTAGE OF THE EXPECTED, FOR SPECIFIED RACES, CANADA, 1931

Racial Origin	P.C. Females Single		Actual as P.C. of Expected
	Actual	Expected	
English.....	30.3	32.0	95
Irish.....	35.1	36.1	97
Scottish.....	34.1	35.0	97
Other British.....	32.9	33.2	99
French.....	39.7	36.8	108
Austrian, n.o.a.....	30.3	30.5	99
Belgian.....	24.8	26.3	94
Czech and Slovak.....	23.7	23.9	99
Dutch.....	29.8	31.2	96
Finnish.....	35.1	35.5	99
German.....	31.4	32.2	98
Hebrew.....	37.2	34.0	109
Hungarian.....	21.2	19.3	110
Italian.....	31.2	31.2	100
Polish.....	30.7	31.0	99
Romanian.....	27.2	28.2	96
Russian.....	31.7	32.3	98
Scandinavian.....	31.2	30.7	102
Ukrainian.....	29.5	30.3	97

Conjugal Condition and Birthplace.—The conjugal condition of males and females 15 years of age and over is shown by broad nativity groups in Table XXII.

TABLE XXII.—PERCENTAGE DISTRIBUTION OF POPULATION 15 YEARS OF AGE AND OVER, BY CONJUGAL CONDITION, BROAD NATIVITY GROUP AND SEX, CANADA, 1931

Conjugal Condition	Canadian Born		British Born		Foreign Born	
	Males	Females	Males	Females	Males	Females
	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.
Total.....	100	100	100	100	100	100
Single.....	46	40	29	18	32	17
Married.....	50	51	66	71	64	75
Widowed.....	4	8	5	11	3	8
Divorced.....	1	1	1	1	1	1
Not stated.....	1	1	1	1	1	1

¹ Fraction of 1 p.c.

In Canada as a whole the proportions of the British born and of the foreign born 15 years of age and over who either are married or have been married are appreciably greater than that for the Canadian-born population. That this tends to be true of all provinces was demonstrated from 1921 figures in the *Origins Monograph** dealing with the census of that year. The fact that these differences may be attributable in part to lower age of marriage customary among many immigrant peoples and in part, to differences in age distribution does not alter their significance from the standpoint of the relative contribution these nativities might be expected to make to the future population of Canada.

* *Op. cit.*, p. 75.

A second point of interest is that for all classes the proportion of females unmarried is smaller than that for the males. Again, the difference between the percentage of males and females unmarried is greater for the foreign and British born than for the Canadian born. Similar differences were evident in the 1921 figures and, as in that year, are in large measure subject to explanation in terms of the excess of males in the population as a whole and the even greater excess among the foreign- and British-born sections of the population than among the native Canadians.

As in the earlier section on race, it is interesting to determine exactly how far age is responsible for these differences in marital condition and in the absence of specific rates for the individual nativities an index of the degree to which the age distribution of those several nativities was more or less favourable to marriage than was that of the population as a whole was computed by an indirect method similar to that described above. The following results were obtained for the females of the different nativities (15 years of age and over):—

TABLE XXIII.—DATA FOR SINGLE FEMALES 15 YEARS OF AGE AND OVER, BY NATIVITY, CANADA, 1931

Nativity	P.C. Unmarried	Index of Age	P.C. Unmarried Corrected for Age	Surplus Males per 100 Females (15 and over)
Total.....	34	100-0	34	10
Canadian born.....	40	111-1	35	2
British born.....	18	64-7	28	15
Foreign born.....	17	78-5	22	50

From the first column it is seen that before allowance is made for age the percentage of the British-born females unmarried was 22 points (40 p.c.—18 p.c.) below that for the Canadian born and that for the foreign born 23 points below. When allowance is made for differences in age distribution these spreads are reduced to 8 and 12 points, respectively. Too great dependence should not be placed on these percentage decreases as a *measure of the influence of age alone*, however, because the necessity of using the indirect method in correcting for age involves the assumption that a relatively large proportion in, say, the 20-24 age group has the same significance from the standpoint of marriage for the individual nativities as for the population as a whole while as a matter of fact such is not the case. Nor has it the same significance for the several nativity groups. The foreign born marry younger than the Canadian or British born. There seems to be no doubt, however, that differences in age distribution are an important cause of differences in the marital status of females of the several nativities—probably more important than in the case of the racial groups because greater variation in age structure occurs. That sex distribution is also intimately associated with conjugal condition may be seen by comparing the percentages in the first and last columns of the table. In the absence of detailed figures for sufficient nativities to permit analysis by the correlation method, it is impossible to accurately measure their joint and several effects on the marriage status of females. When age distribution changes, sex distribution changes, and the present technique does not permit the holding of one stationary while the influence of the other is examined. However, their influence was carefully evaluated in the foregoing racial study and it must suffice here merely to show that they are factors of major importance in accounting for the differences in the conjugal condition of the various nativity groups as well. The preceding table provides abundant evidence of this fact.

CHAPTER IV

DISTRIBUTION BY PROVINCES

In Chapter I, attention was directed to the proportions of different stocks in the population of Canada as a whole; Chapter II dealt with differences in length of Canadian residence. Important as are such considerations, in some ways they are overshadowed by those of territorial distribution. The geographical distribution of the *foreign* stocks is especially significant. In dealing with this topic several questions immediately arise. How are the foreign stocks and the foreign born distributed among the different provinces of Canada? What changes, if any, are taking place? How are the foreign stocks distributed as between urban and rural districts? Which stocks tend to settle in solid blocs and which intermingle with the present population? Finally, what is the significance of the differences appearing and how are they to be explained? This chapter attempts to answer the first two of the above questions and certain others incidental thereto. The immediately succeeding ones will be devoted respectively to rural and urban distribution and segregation.

Distribution of Various Stocks by Provinces.—Table 27 shows the percentage distribution of the population of the various provinces in Canada by racial origins as at the last four census enumerations. The first column shows the percentage of British origin in the population of each province in 1931. Prince Edward Island with 84 p.c. had by far the largest proportion of British stock. Nova Scotia, Ontario and British Columbia were also predominantly Anglo-Saxon by extraction, with a proportion of well over 70 p.c. in each case. In the Prairies and New Brunswick the percentages were much lower.

As is to be expected, the proportion of French origin in the province of Quebec is far greater than in any other section of the country. New Brunswick ranks second with approximately a third French. Prince Edward Island and Nova Scotia follow in the order named but with much smaller percentages. In the West the proportion of French stock is very small indeed, ranging only from 5 to 7 p.c. in the Prairie Provinces, and dropping as low as 2 p.c. in British Columbia. Ontario stands midway between the Maritimes and the Prairie Provinces.

A comparison of Column 2 and Column 3 reveals the interesting fact that while the proportions of French in the Eastern Provinces are large as compared with the West the reverse obtains in the case of other European origins. From Quebec east, the proportion of other European origins in the populations of the respective provinces is less than 11 p.c. In fact, Nova Scotia with 10.31 p.c. is the only province east of Ontario with a significant intermingling of foreign stocks. In Prince Edward Island the proportion is less than 1 p.c. Passing westward one finds Ontario and British Columbia with 16 p.c. of their populations of "other" European origin, while the proportions in the three Prairie Provinces range between 38 and 45 p.c. It would be difficult to over-emphasize the significance of these facts. In the middle western provinces, the relative proportion of foreign European stocks is from two and a half to some forty-five times greater than in other parts of the Dominion, and on the average perhaps four times greater than in the East as a whole. The racial structure of the population in the Prairie Provinces is thus entirely different from that in Ontario, Quebec and the Maritimes. Reference will be made below to some of the consequences of these differences.

The Asiatics form a far larger proportion of the population of British Columbia, where the Orient and Occident meet, than in other parts of Canada. The percentage is eleven times greater than in Alberta, which stands second, and the disparity generally increases in passing eastward.

The significance of these figures may be brought out more clearly by arranging the provinces in rank according to the proportion of British, French, Other European and Asiatic stocks in their populations in 1931:—

Province	Rank	Province	Rank
British origin—		French origin—	
Prince Edward Island.....	1	Quebec.....	1
Nova Scotia.....	2	New Brunswick.....	2
Ontario.....	3	Prince Edward Island.....	3
British Columbia.....	4	Nova Scotia.....	4
New Brunswick.....	5	Ontario.....	5
Alberta.....	6	Manitoba.....	6
Manitoba.....	7	Saskatchewan.....	7
Saskatchewan.....	8	Alberta.....	8
Quebec.....	9	British Columbia.....	9
Other European origin—		Asiatic origin—	
Saskatchewan.....	1	British Columbia.....	1
Alberta.....	2	Alberta.....	2
Manitoba.....	3	Saskatchewan.....	3
British Columbia.....	4	Ontario.....	4
Ontario.....	5	Manitoba.....	5
Nova Scotia.....	6	Nova Scotia.....	6
Quebec.....	7	Quebec.....	7
New Brunswick.....	8	New Brunswick.....	8
Prince Edward Island.....	9	Prince Edward Island.....	9

The material in Table 27 is presented also in Figs. 26, 27, 28 and 29.

Table 28 shows the same data with the percentages for each origin classification placed in juxtaposition thus facilitating comparison between the four census dates. In every province *British races* constituted a smaller proportion of the population in 1931 than in 1921. The decline was most marked in the three Prairie Provinces but was also quite noticeable in British Columbia, Ontario and New Brunswick. From Manitoba east, the change during the last decade merely represents a continuation in a somewhat more accentuated degree of a tendency which has been in evidence since the beginning of the century; for Saskatchewan, Alberta and British Columbia it marks a definite reversal of trend. In the latter provinces Anglo-Saxons had been increasing in relative importance for the twenty years previous to the current decline.

These declines in the proportions of Anglo-Saxon stock in the populations of the several provinces may be explained in terms of the relative influx of British and foreign immigration, emigration, movement of population between provinces, different rates of natural increase of the British and non-British stocks and the stationary character of the native Indian population. The relative importance of these influences varies from province to province and from decade to decade. For instance, in New Brunswick the more rapid increase of the French both by immigration and natural increase was of major importance; in Quebec the paucity of British immigration and the high rate of natural increase among the native population were the determining factors, and in Ontario, foreign immigration (especially during the last decade) and the movement of French from the adjacent province of Quebec.

During the last ten years British immigration to western Canada fell off sharply, the westward trek from eastern Canada was actually reversed*; such immigration as did occur was largely of non-British origin; and what is of even greater importance, the fertility of the large resident population of foreign extraction continued at a much higher level than that of either the native or immigrant Anglo-Saxons. The latter cause is especially important in the Prairie region where such a large proportion of the population is of foreign origin. As a result of these influences the majority of the population of Saskatchewan is now of non-Anglo-Saxon extraction and a continuation of present trends promises to bring about a similar situation in both Manitoba and Alberta before the next decennial census.

The early increases in the proportions of British stock in the three provinces west of Manitoba were due partly to heavy immigration of Anglo-Saxons from Eastern Canada, the United States and Great Britain and in the case of British Columbia partly to the influx of native Anglo-Saxon settlers from the Prairie Provinces. Further, in the West the Indian population has drastically declined in relative importance. For example, in Saskatchewan it constituted nearly 20 p.c. of the population in 1901, but in 1921 less than 2 p.c. The existence of this group, which is practically

*Hurd, W. B.: *Population Movements in Canada, 1921-31 and Their Implications*, Papers and Proceedings of the Canadian Political Science Association, Vol. VI, 1934.

stationary in numbers, would in itself make for percentage increases in the other growing stocks and can not be neglected among the influences accounting for the relative increase of the British in the three western provinces prior to 1921.

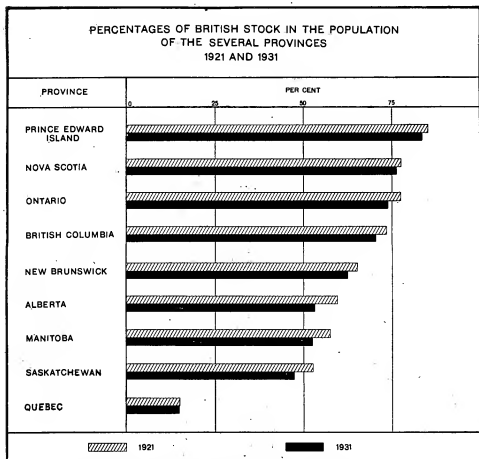


FIG. 25. Great differences occur in the proportions of Anglo-Saxons in the populations of the several Canadian provinces. In all sections of the Dominion the proportions declined between 1921 and 1931. The declines were greatest in the Prairie region where high-fertility foreign stocks are relatively most numerous.

The proportion of *French* in the populations of most provinces continues to move slightly upward except in Quebec where a small decline was registered in the last decade, owing to a considerable net emigration of native French Canadians to the United States and an appreciable increase in foreign immigration to the urban sections of the province. In those parts of Canada where the French grew more rapidly than the population as a whole, differences in the rates of increase were negligible except in the Maritimes where the absence of any considerable influx of other Europeans permitted the full effects of higher fertility being reflected in the figures, and where the repatriation of French Canadians from the United States further augmented the numerical strength of that race. Moreover, a considerable exodus of native Canadians from the Maritimes occurred during the decade and it may well have been that this outward stream contained a disproportionately large proportion of Anglo-Saxons—a circumstance which would tend to increase the proportion of French in the remaining population. At any rate significant increases in the relative importance of the French were confined to the three Maritime Provinces and most of these increases were moderate. In only one province has the increase assumed major dimensions at any time since the beginning of the century. The case in point is that of

New Brunswick. There the proportion of French stock in the population grew from 24.15 p.c. in 1901 to 33.56 p.c. in 1931. Elsewhere in Canada and particularly in the western parts, immigration from abroad and high birth rates of foreign stocks have tended to counterbalance the heavy natural increase of the resident French population and such migration as occurred from the province of Quebec.

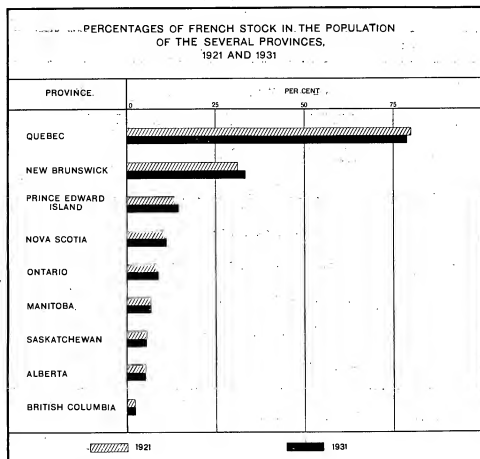


FIG. 27. This graph further emphasises the inter-regional differences in ethnic structure of our population. The relative density of the French varies from 79 p.c. in Quebec to 2.16 p.c. in British Columbia. In the Maritimes, particularly New Brunswick, this origin is relatively much more numerous than from Ontario west. As a stock, the French more than held their own in Canada during the last inter-censal decade despite the virtual absence of additions through overseas immigration.

Turning now to the *Continental European* group, definite increases in relative importance are apparent in all provinces except the Maritimes. The upward trend was on the whole more pronounced during the last decade than at any time since the turn of the century despite the reduced volume of Continental European immigration. A contributory cause was the relatively greater reduction in immigration from the British Isles, but of far greater moment was the continued persistence of high fertility rates among persons of foreign extraction. The shift of current European immigration westward to Alberta and British Columbia and eastward to Ontario and Quebec also has a bearing on the increasing density of foreign stocks in these provinces.

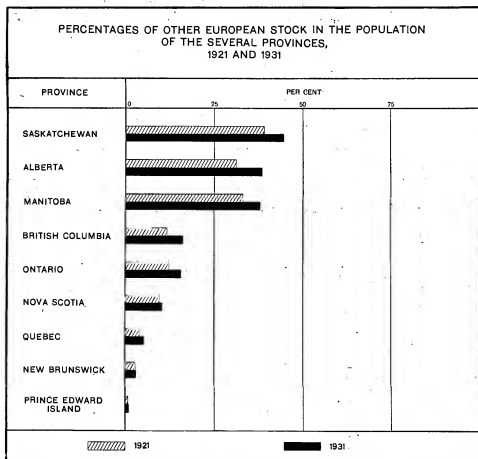


FIG. 28. Perhaps the most significant characteristic of the Canadian population structure is the uneven distribution of foreign stocks which is graphically depicted above. During the last decade the differential increase in foreign origins was on the whole more pronounced than at any time since the beginning of the century. It was greatest in the West where as a result of immigration and high fertility their numbers were already disproportionately large.

While the proportions of *Asiatic* origins have continued to increase moderately for Canada as a whole, their relative decline in British Columbia has persisted from 1901 to the present. In this respect British Columbia differs from every other province in the Dominion, for in all other provinces the proportions of the population of Asiatic origin have increased with almost universal consistency since the beginning of the century. A partial explanation of this difference in behaviour is found in the relatively small numbers of Asiatics in the provinces to the east of British Columbia in 1901. For instance, in Saskatchewan there were only 42 Asiatics while British Columbia already had 19,482. During the three subsequent decades the actual number of Asiatics in British Columbia increased by 31,469, yet the total population grew still more rapidly, resulting in a net decrease in the *proportion* of Asiatics in that province. In Saskatchewan, on the other hand, the numerical increase was only 4,367, but this represented a rate of increase on the original 42 which was much greater than that of the total population. The absolute increase in British Columbia was between seven and eight times greater than in Saskatchewan. The situation is analogous as between British Columbia and the other provinces. As has been said, the continued decline in the relative importance of the Asiatic population in British Columbia despite exceedingly high rates of natural increase among the Japanese, should be associated with the unusually large additions to the population of British Columbia through

immigration both from abroad and from other parts of Canada. Despite generally low birth rates, between 1921 and 1931 the population of British Columbia increased a third faster than that of any other provincial division and four-fifths more rapidly than that of Canada as a whole. This achievement clearly indicates heavy additions from sources outside the province.

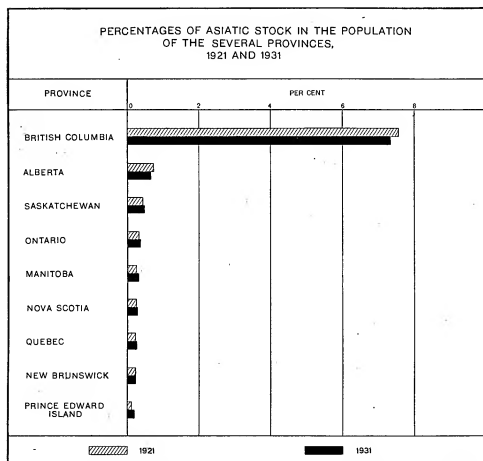


FIG. 29. In British Columbia, Asiatics constitute a proportion of the population nine times greater than in Canada as a whole. Their relative density declines drastically in passing eastward from the west coast. Other origins have been increasing more rapidly than the Asiatics in British Columbia but in most other parts of Canada the Asiatics have shown numerical expansion slightly more marked than that of the general population.

The declining importance of the North American Indian is clearly shown in the last section of the table.

The Birthplaces of the Population by Provinces.—Table 29 (p. 242) shows the distribution of the population by birthplace for Canada and the provinces in 1911, 1921 and 1931. Tables 30 and 31 arrange the data for the European born by geographical and linguistic groups and Table 32 presents a summary for Canada and the provinces. The information in these rather formidable tables may best be presented by the use of charts. (See Fig. 5, p. 7 and Fig. 30 for graphical presentation of 1931 data by broad nativity groups.)

The nine provinces, arranged in order of the percentage of their population *Canadian-born* in 1931, are as follows (see Fig. 30):—

TABLE XXIV.—PERCENTAGE OF THE POPULATION CANADIAN-BORN, CANADA AND PROVINCES, 1911-1931

Province	P.C. Canadian-Born		
	1911	1921	1931
CANADA.....	77.98	77.75	77.76
Prince Edward Island.....	97.25	97.33	96.83
New Brunswick.....	94.80	94.47	94.02
Nova Scotia.....	92.03	91.69	91.85
Quebec.....	92.67	92.01	91.24
Ontario.....	79.90	78.13	76.56
Manitoba.....	58.64	63.55	66.21
Saskatchewan.....	50.52	60.44	65.44
Alberta.....	43.25	53.55	58.21
British Columbia.....	43.14	50.34	53.98

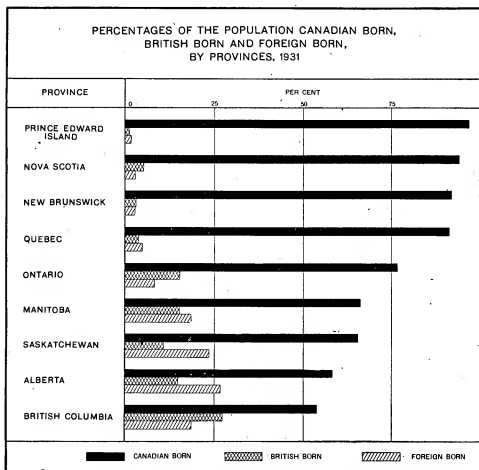


FIG. 30. The above chart emphasizes the inordinately large proportions of immigrants in the population of Western, as compared with Eastern Canada. In Ontario, British immigrants outnumber foreign by nearly two to one; British settlers are also more numerous in British Columbia. Immigration to the Prairie Provinces, on the other hand, has been overwhelmingly foreign.

The first point to note is the wide variation in the proportions. In 1931, the percentage Canadian-born was nearly twice as high in Prince Edward Island as in British Columbia. Indeed, from Quebec east the proportions were on an entirely different level from those in Ontario and Western Canada. The percentage of Canadian born fluctuates so violently that the traveller

finds on reaching the Pacific Coast that he has passed from the far east where less than 3 p.c. of the population was born outside Canada to the extreme west where nearly half is of non-Canadian birth.

A comparison of the proportions Canadian-born in 1911, 1921 and 1931 shows that the provinces stand in virtually the same rank at all three census dates. In the East the proportion Canadian-born was slightly smaller in 1931 than in 1921. In Ontario it was considerably smaller. From Manitoba west, on the other hand, the Canadian born constituted larger proportions of the population of every province and in every instance a materially larger proportion. The explanation of these differences seems to be threefold: first, *emigration* of native Canadians during the decade was relatively heavier in the Maritimes than in the other provinces*; second, a radical change occurred in the direction of current *immigration* from abroad, larger proportions going to the central provinces (particularly Ontario) than formerly and smaller numbers settling in the agricultural west†; and third, the high fertility of earlier immigrants coupled with their relatively large numbers resulted in a great increase in the Canadian-born children of foreign stocks in that part of the Dominion lying between the Great Lakes and the Pacific Coast.

The proportions of the population born in the *British Isles* and *British Possessions* at the close of the last three decades are tabulated below:—

TABLE XXV.—PERCENTAGE OF THE POPULATION BRITISH-BORN, CANADA AND PROVINCES, 1911-1931

Province	P.C. British-Born		
	1911	1921	1931
CANADA.....	11.57	12.12	11.42
British Columbia.....	30.06	30.62	27.30
Ontario.....	14.19	15.65	15.34
Manitoba.....	20.60	18.53	15.15
Alberta.....	18.61	16.88	14.86
Saskatchewan.....	16.45	13.24	10.95
Nova Scotia.....	5.13	5.63	5.27
Quebec.....	3.62	3.80	3.88
New Brunswick.....	2.89	2.75	3.11
Prince Edward Island.....	1.74	1.20	1.31

Attention again is directed to the wide range of the percentages. In contrast with the Canadian born, the proportion of the population born in the British Isles and other British Possessions is very much heavier from Ontario west than in Quebec and the Maritimes. The proportion of British immigrants in the population of the five western provinces is two to five times greater than in Nova Scotia, which shows the highest percentage of any of the four eastern provinces. Thus the effect of British immigration in the past generation on the composition of the population in the various provinces has been to give a more than proportionate number of this class of settler to Ontario and the four western provinces.

British Columbia in particular has consistently received a disproportionate share of British immigration. In 1931, as at the two previous census dates that province showed much the largest percentage of her population British-born. While Ontario, as will be shown later, has received a much greater absolute number of British immigrants than British Columbia, her population is several times larger, so that British immigrants constitute a much smaller percentage of her total population.

During the last decade, notable declines have occurred in the proportions of British born in the populations of all four western provinces. In Saskatchewan the drop was quite drastic. The decreasing importance of British immigrants in Western Canada finds its principal explanation in the declining relative and absolute magnitude of British immigration, the growing volume of natural increase and the resumption of foreign immigration particularly from Central Europe. The fact that the decline was so much less marked in Ontario suggests that that province has been receiving somewhat more than its usual share of this type of immigration in late years and the increase recorded for Quebec points to a similar conclusion in regard to that province. Between 1921 and 1931 emigration of native Canadian born from the Maritimes was relatively on such a large scale* that its influence was probably almost adequate to prevent any appreciable change

*Hurd, W. B. and Cameron, J. C.: *Population Movements in Canada, 1931-31—Some Further Considerations*, The Canadian Journal of Economics and Political Science, Vol. I, No. 2, May, 1935, p. 242.

†*Ibid.*, pp. 237-8.

in the balance between British immigrants and the remainder of the population, apart altogether from new arrivals from overseas. A certain increase in British immigrants, however, did occur in the Maritimes as a whole.

The following table presents similar figures for the *foreign born*:—

TABLE XXVI.—PERCENTAGE OF THE POPULATION FOREIGN-BORN, CANADA AND PROVINCES, 1911-1931

Province	P.C. Foreign-Born		
	1911	1921	1931
CANADA.....	10.44	10.13	10.52
Alberta.....	38.13	29.56	26.92
Saskatchewan.....	33.02	26.31	23.60
British Columbia.....	28.78	19.02	18.70
Manitoba.....	20.74	17.91	18.63
Ontario.....	5.89	6.21	8.09
Quebec.....	3.71	4.18	4.90
Nova Scotia.....	2.93	2.67	2.87
New Brunswick.....	2.31	2.77	2.86
Prince Edward Island.....	1.00	1.46	1.85

A cursory examination of the data reveals that in the matter of the relative density of persons of alien nativity the populations of the four western provinces are quite in a class by themselves. While Ontario ranks along with the Prairie Provinces in the percentage of British immigrants in her population, she stands far below them when it comes to the foreign born. In the generation prior to 1931 the Prairie Provinces as a whole absorbed about half again as many foreign as British immigrants. This performance is in striking contrast with that of Ontario which took twice as many British as foreign. British Columbia stands midway between with approximately 50 p.c. more British than foreign. Such differences have been an important contributory cause of the growing lack of racial homogeneity as between the several political divisions of the Dominion. Perhaps the underlying reason for this unevenness of spread as between the two classes of immigrants is that immigration from the highly industrialized British Isles has been predominantly urban in origin and naturally has been attracted in greater volume to the rapidly growing towns and cities of Ontario and British Columbia, while the agricultural opportunities of the Prairies have had a greater appeal for the more rural immigrants from Continental Europe.

In this connection, a very significant change is taking place. In the four western provinces as a whole the percentage of foreign born in the population has declined steadily since the beginning of the century. In all five eastern provinces the proportion has consistently increased. Obviously a greater proportion of foreign immigration appears to be finding its way to Eastern Canada than formerly and a smaller proportion is going west. Further light is thrown on this shift, in the chapter on rural and urban distribution. If there be any value in historical analogies the experience of the United States would suggest that the tendency is likely to continue if and when immigration to Canada is again resumed.

As in the case of the British born, persons of foreign birth still constitute very small proportions of the population in both Quebec and the Maritimes.

It is also instructive to examine similar figures for the North Western and South, Eastern and Central Europeans separately. Data for the *North Western Europeans* appear below:—

TABLE XXVII.—PERCENTAGE OF THE POPULATION NORTH WESTERN EUROPEAN-BORN, CANADA AND PROVINCES, 1911-1931

Province	P.C. Born in North Western Europe		
	1911	1921	1931
CANADA.....	1.80	1.51	1.73
Alberta.....	5.36	4.53	5.05
Saskatchewan.....	5.06	4.33	4.26
British Columbia.....	4.41	2.91	3.97
Manitoba.....	4.66	3.46	3.30
Ontario.....	0.96	0.73	0.96
Quebec.....	0.33	0.47	0.56
Nova Scotia.....	0.38	0.41	0.40
New Brunswick.....	0.27	0.25	0.33
Prince Edward Island.....	0.02	0.38	0.17

The range of fluctuations is again impressive although in point of absolute magnitude the figures are naturally smaller than those previously considered. As in the case of all foreign born a distinct drop appears in the proportion of Northern Europeans as we pass from Manitoba to Ontario and eastward. It is interesting to find that Alberta has a higher proportion of North Western European immigrants in her population than any other province in the Dominion. In 1931 it was thirty times greater than that for Prince Edward Island, about fifteen times greater than in the Maritimes generally, nine times that of Quebec and five times that of Ontario. As indicated above, natural increase and fluctuations in the volume of immigration and emigration are the principal factors in terms of which decade to decade variations may be explained.

The relative density of the *South, Eastern and Central European* born in the various provinces was as follows:—

TABLE XXVIII.—PERCENTAGE OF THE POPULATION SOUTH, EASTERN AND CENTRAL EUROPEAN-BORN, CANADA AND PROVINCES, 1911-1931

Province	P.C. Born in South, Eastern and Central Europe		
	1911	1921	1931
CANADA.....	3-74	3-08	5-06
Manitoba.....	12-09	10-57	12-34
Saskatchewan.....	12-45	9-94	10-55
Alberta.....	9-21	7-25	10-31
Ontario.....	2-43	2-74	4-65
British Columbia.....	5-43	3-07	4-40
Quebec.....	1-50	1-70	2-35
Nova Scotia.....	0-67	0-70	0-85
New Brunswick.....	0-29	0-25	0-25
Prince Edward Island.....	0-03	0-02	0-03

Notice in the first place that the variation in the percentages shows a greater range of fluctuation between the provinces than was found in the figures for North Western European immigrants. Aside however from the greater spread and the associated difference, the percentages generally being from two to three times larger for the South, Eastern and Central Europeans, the distributions depicted by the two sets of figures are much the same. In the three Prairie Provinces, South, Eastern and Central European immigrants form a much larger proportion of the total population than in any other part of Canada. British Columbia and Ontario rank next with about two-fifths as large a proportion as that obtaining in the Prairies. Passing eastward to Quebec and the Maritimes the decline is very marked. While the proportions in the four western provinces were considerably lower in 1921 than in 1911, during the last decade increases were recorded by all nine provinces.

In connection with the provincial distribution of the *Scandinavian* born, it is rather significant that only from Manitoba westward has that group other than a very negligible place in the population. The percentages for the four western provinces were as follows:—

TABLE XXIX.—PERCENTAGE OF THE POPULATION SCANDINAVIAN-BORN, FOUR WESTERN PROVINCES OF CANADA, 1911-1931

Province	P.C. Born in Scandinavian Countries		
	1911	1921	1931
Alberta.....	3-67	2-68	3-00
British Columbia.....	3-01	2-01	2-80
Saskatchewan.....	3-28	2-57	2-42
Manitoba.....	2-39	1-83	1-70

In all cases the percentages were smaller in 1921 than in 1911. During the last decade increases occurred in Alberta and British Columbia, but the decline continued in both Manitoba and Saskatchewan.

The proportions of the population born in *Germanic* countries in the several provinces appear below:—

TABLE XXX.—PERCENTAGE OF THE POPULATION GERMANIC-BORN, CANADA AND PROVINCES, 1911-1931

Province	P.C. Born in Germanic Countries		
	1911	1921	1931
CANADA.....	0.71	0.51	0.65
Alberta.....	2.20	1.36	1.66
Saskatchewan.....	2.07	1.26	1.45
Manitoba.....	1.59	1.08	1.20
British Columbia.....	1.08	0.54	0.83
Ontario.....	0.64	0.43	0.58
Quebec.....	0.17	0.15	0.22
Nova Scotia.....	0.24	0.19	0.17
New Brunswick.....	0.07	0.07	0.07
Prince Edward Island.....	0.01	—	0.03

Here again one finds a larger proportion in the West than in the East, though the differences are not so marked as with the Scandinavians. In all cases the proportions were lower in 1921 than in 1911, but with one or two minor exceptions they were higher in 1931.

The data for the *Latin and Greek* group are presented in the following table:—

TABLE XXXI.—PERCENTAGE OF THE POPULATION BORN IN LATIN AND GREEK COUNTRIES, CANADA AND PROVINCES, 1911-1931

Province	P.C. Born in Latin and Greek Countries		
	1911	1921	1931
CANADA.....	0.52	0.70	0.85
Alberta.....	0.52	0.98	1.48
Saskatchewan.....	0.06	1.05	1.22
British Columbia.....	2.24	1.07	1.09
Ontario.....	0.69	0.69	1.00
Manitoba.....	0.16	0.61	0.72
Quebec.....	0.35	0.61	0.64
Nova Scotia.....	0.15	0.19	0.20
New Brunswick.....	0.09	0.08	0.05
Prince Edward Island.....	0.01	0.01	0.01

As in the case of the Germanic group, greater uniformity appears to obtain in the proportionate distribution of the Latins and Greeks in the more populous provinces of the Dominion. Yet a glance at the figures shows that even of this group the West has received more than her proportionate share and the Maritimes much less. The proportion of the population of Canada born in these countries was higher in 1921 than in 1911 and in 1931 than in 1921. The Roumanians are relatively more dense in the rural sections of the Prairie Provinces and the Italians and Greeks in the more urban provinces of Ontario, Quebec and British Columbia.

Little need be said of the Slavic group* except to present the figures:—

*Immigrants born in Slavic countries include a considerable number who are Hebrew by origin.

TABLE XXXII.—PERCENTAGE OF THE POPULATION BORN IN SLAVIC COUNTRIES, CANADA AND PROVINCES, 1911-1931

Province	P.C. Born in Slavic Countries		
	1911	1921	1931
CANADA.....	2.91	2.72	3.64
Manitoba.....	11.66	9.72	11.31
Saskatchewan.....	11.05	8.09	8.82
Alberta.....	5.01	5.81	8.06
Ontario.....	1.40	1.64	2.78
British Columbia.....	2.38	1.58	2.45
Quebec.....	1.13	1.07	1.48
Nova Scotia.....	0.44	0.47	0.56
New Brunswick.....	0.20	0.18	0.18
Prince Edward Island.....	0.02	0.01	0.02

The magnitude of the differences in the proportions of foreign-born Slavs in the populations of the several provinces is at once obvious. Excessive concentrations in the Prairie Provinces are especially noticeable. In Manitoba, 11.31 p.c. of her population consists of immigrants from Slavic countries, i.e., appreciably over a tenth of the total. The proportions are somewhat lower in Saskatchewan and Alberta, but still about three times greater than in Ontario and British Columbia which rank next highest. Over the last decade, every province but New Brunswick witnessed an increase in the percentage of resident Slavic immigrants.

The rank of the provinces according to the proportions of *United States born* is interesting:—

TABLE XXXIII.—PERCENTAGE OF THE POPULATION UNITED STATES-BORN, CANADA AND PROVINCES, 1911-1931

Province	P.C. Born in the United States		
	1911	1921	1931
CANADA.....	4.21	4.26	3.32
Alberta.....	21.74	19.97	19.79
Saskatchewan.....	14.14	11.57	7.62
British Columbia.....	9.57	6.66	5.00
Manitoba.....	3.54	3.55	2.56
New Brunswick.....	1.64	2.13	2.15
Ontario.....	2.20	2.41	2.11
Quebec.....	1.49	1.78	1.72
Prince Edward Island.....	0.89	1.37	1.57
Nova Scotia.....	0.98	1.34	1.41

Alberta and Saskatchewan show by far the largest proportions of their populations born in the United States. The percentages gradually decline on passing eastward yet unlike those for any of the nativity groups previously examined, they are by no means negligible for the Maritime Provinces. For some time there has been a considerable movement of both British and French-Canadian stock from the Eastern States back to Canada and it is believed that this migration largely accounts for the percentages of American born in the East being larger than the percentages for other immigrants. This movement to the Maritimes continued throughout the last decade as evidenced by the increasing absolute and relative importance of United States born in all three provinces. Elsewhere in Canada the proportions declined. The declines were especially marked in Alberta, Saskatchewan and Manitoba from the first two of which provinces there was an actual exodus of United States born of considerable proportions.* In all three Prairie Provinces immigrants from the United States were predominantly rural and for the most part settled in those sections which have suffered most from drought. Moreover they were largely of British, Scandinavian and Germanic stocks. As it became apparent that the agricultural depression was likely to be long continued in those areas, apparently many simply moved out.

The proportions of *Asiatics* in the various provinces appear below.

*A net exodus also occurred from Manitoba other than by death but it was of moderate dimensions. In Eastern Canada there was a net inward movement of United States immigrants but only in the Maritimes, where on the whole the total population remained more or less stationary, did the proportion United States-born actually increase.

TABLE XXXIV.—PERCENTAGE OF THE POPULATION ASIATIC-BORN, CANADA AND PROVINCES, 1911-1931

Province	P.C. Born in Asiatic Countries		
	1911	1921	1931
CANADA.....	0.57	0.61	0.58
British Columbia.....	6.88	6.22	5.15
Alberta.....	0.59	0.63	0.56
Saskatchewan.....	0.30	0.40	0.41
Ontario.....	0.22	0.26	0.27
Manitoba.....	0.24	0.24	0.27
Quebec.....	0.14	0.17	0.16
Nova Scotia.....	0.11	0.14	0.14
New Brunswick.....	0.07	0.11	0.10
Prince Edward Island.....	0.02	0.04	0.07

Comment is hardly necessary in this connection except to note the rather significant fact that the relative density of Asiatics in British Columbia is ten times greater than that in the next highest province (Alberta) and over seventy times greater than in the lowest (Prince Edward Island). In British Columbia there are twice as many Asiatic immigrants as Scandinavians or Slavs; and they outnumber the Latin and Greek and Germanic born by from five to six times. During the last decade the Asiatic born have not increased quite as rapidly as the population as a whole, although a moderate tendency to overflow from the Coast region to the eastern portion of the Prairies still appears to persist.

The purpose of the above detailed analysis is to emphasize the unfortunate differences in the population structure of the English-speaking provinces of the Dominion and to draw attention to the role of immigration in contributing to the increasing racial heterogeneity as between the major political divisions of the country. The situation may be summarized from several angles each throwing light on a different aspect of the problem.

A comparison between the 1931 and 1921 figures emphasizes certain significant changes in the nativity distribution of the population. First, the proportion of British immigrants in the populations of all four western provinces continued to decline rapidly, that in Ontario and Nova Scotia almost held its own, while in the other three eastern provinces it showed slight increases. A similar downward trend characterized the foreign born as a whole in the region west of the Great Lakes, while a definite upward trend was in evidence from Ontario east. These figures suggest, among other things, a marked shifting of the relative capacity of eastern and western Canada for absorbing immigration from other countries whether British or foreign. Further analysis reveals that the declining proportion of foreign born in the West is attributable not only to the complete cessation of immigration from the United States but to actual withdrawals of persons of United States birth and on a fairly large scale. There was no falling off of European immigration as compared with that of the previous decade. The proportions of South, Eastern and Central European born showed notable increases over the ten-year period. This was especially true of the Slavs (including some of Hebrew origin) and to a lesser degree of the Latins and Greeks. Even the Germanic immigrants constituted a slightly larger percentage of the population of all four western provinces in 1931 than in 1921. For the Scandinavians gains and losses were equally divided. In the East on the other hand, the United States born about held their own in the population, the proportions showing slight decreases in Ontario and Quebec and slight increases in the Maritimes. The same was generally true of British-born immigrants, while the central provinces particularly absorbed somewhat more than their usual share of European immigration as a whole.

This change may be demonstrated and probably with greater clarity by comparing the percentage increases in the absolute numerical strength of the several nativities in the nine provinces. The figures are presented below and the reader is left to make his own analysis:—

TABLE XXXV.—PERCENTAGE INCREASES IN POPULATION, BY BROAD NATIVITY GROUPS, CANADA AND PROVINCES, 1921-1931

Province	P.C. Increase			
	Total Population	British Born	European Born	United States Born
CANADA.....	18	11	55	-8
Prince Edward Island.....	-1	9	397	14
Nova Scotia.....	-2	-8	11	3
New Brunswick.....	5	19	22	6
Quebec.....	22	23	65	17
Ontario.....	17	15	89	3
Manitoba.....	15	-6	29	-17
Saskatchewan.....	22	0	30	-17
Alberta.....	24	9	33	-21
British Columbia.....	32	18	86	0

It is instructive also to summarize the findings from the point of view of the relative importance of the different classes of immigrants in the population of the individual provinces as at the last census (Table 32).

In Prince Edward Island, out of 1.85 p.c. *foreign-born*, 1.57 p.c. came from the United States. It is thus seen that the only significant foreign immigration to Prince Edward Island has been from the country to the south. In Nova Scotia out of 2.87 p.c. *foreign-born*, one-half came from the United States and a little less than half from Europe; and in New Brunswick, with a little less than 3 p.c. *foreign-born*, some three-quarters of that number reported themselves of United States birth. Thus, in the Maritime Provinces, while the actual percentages of *foreign born* are comparatively small, the great bulk of them came from the Eastern States. In this section of Canada the proportion of immigrants born in the British Isles was only fractionally smaller than that born in all foreign countries put together.

The latter statement also holds true of Quebec, but in that province of the 4.90 p.c. *foreign-born*, more than half were from Europe, mostly from Slavic and Latin and Greek countries. Practically the whole of the balance came from the United States.

In Ontario on the other hand, the proportion of British-born immigrants is nearly twice as great as of *foreign-born*. Ontario is unique in this respect. Of the 8.09 p.c. *foreign-born*, over half were from Europe and 2.11 p.c. from the United States. Of the Continental Europeans the majority came from South, Eastern and Central countries, those born in Slavic countries contributing the largest proportion.

As we pass westward the proportion of foreign and British born is again reversed. In Manitoba the foreign born outnumbered immigrants from the British Isles by 25 p.c.; in Saskatchewan there were over twice as many foreign as British born and in Alberta 84 p.c. more. In the Prairie Provinces immigration from foreign countries has greatly exceeded that from the Old Land.

Of the 18.6 p.c. *foreign-born* in the population of Manitoba, about 85 p.c. were from Europe and 14 p.c. from the United States. In Saskatchewan, of the 23.60 p.c. *foreign-born*, two-thirds were from Europe and one-third from the United States and in Alberta persons born in the United States constituted two-fifths of all *foreign-born* residents. Thus American immigration tends to become relatively more important in passing from east to west, the percentage being largest in Alberta. In British Columbia the relative importance of American immigration declines again.

As was intimated above, Manitoba showed 85 p.c. of her foreign born from European countries. It is interesting to note the distribution of their places of birth. Those born in South, Eastern and Central Europe were nearly four times more numerous than those coming from northern and western parts of the continent, and nine-tenths of the South, Eastern and Central European immigrants came from Slavic countries. Indeed, in Manitoba there were almost three and a half times as many immigrants of Slavic birth as from all Northern European countries combined. Of the North Western Europeans those of Scandinavian birth were slightly in excess of those born in Germanic countries.

Saskatchewan had over twice as many foreign as British born, and just under two-thirds of the former were of European birth. This province had a slightly larger proportion of North Western Europeans than had Manitoba. South, Eastern and Central Europeans were two and a half times more numerous than those of North Western European birth, while in Manitoba their number was almost four times greater. These figures compare with twice and three times respectively in 1921 reflecting the disproportionate increase in South, Eastern and Central European immigration during the last decade. A similar trend was in evidence in Alberta. While in the latter province, South, Eastern and Central European immigrants do not constitute such an overwhelming percentage of immigrant residents as in Manitoba and Saskatchewan, they outnumbered the North Western Europeans by over two to one in 1931, as against about one and a half to one in 1921.

Because of the heavy preponderance of British stock among the United States immigrants to Canada, Alberta, though showing much the largest percentage *foreign-born* of all the provinces in the Dominion, is not so foreign racially as the crude figures suggest. Verification of this statement is found in Table 27.

British Columbia, like Ontario, has a much larger number of British than *foreign-born* immigrants. In this respect she differs from the Prairie Provinces. Moreover, while her proportion *foreign-born* is about equal to that of Manitoba their distribution is unique in that they are

much more evenly divided between Europe, Asia and the United States. With 8.70 p.c. of her population of European birth, 5.15 of Asiatic and 5.00 born in the United States, we have an alignment quite different from that in any other province of Canada.

Table XXXVI presents a summary from still a different point of view. It ranks the provinces according to the relative density of the population of specified countries and groups of countries of birth. A few interesting facts may be mentioned. While Prince Edward Island has the largest percentage Canadian-born, it shows the lowest proportion of immigrants from all countries except the United States, in which case it cedes its place at the foot of the list to Nova Scotia. British Columbia has the highest proportion born in the British countries (other than Canada) and in Asia. Alberta has the highest percentage foreign-born; this province also leads in the proportion born in the United States and in Scandinavian, Germanic, Latin and Greek countries. Manitoba has the highest proportion of South, Eastern and Central Europeans and also the largest proportion of Slavic birth.

TABLE XXXVI.—PROVINCES RANKED ACCORDING TO PERCENTAGE OF POPULATION OF SPECIFIED BIRTHPLACE, CANADA, 1931

Rank	Birthplace										
	Canada	British Countries	Foreign Countries	North Western Europe	South, Eastern and Central Europe	Scandinavian Countries	Germanic Countries	Latin and Greek Countries	Slavic Countries	U.S.A.	Asiatic Countries
1.....	P.E.I.	B.C.	Alta.	Sask.	Man.	Alta.	Alta.	Alta.	Man.	Alta.	B.C.
2.....	N.B.	Ont.	Sask.	Sask.	Sask.	B.C.	Sask.	Sask.	Sask.	Sask.	Alta.
3.....	N.S.	Man.	B.C.	B.C.	Alta.	Sask.	Man.	B.C.	Alta.	B.C.	Sask.
4.....	Que.	Alta.	Man.	Man.	Ont.	Man.	B.C.	Ont.	Ont.	Man.	Ont.
5.....	Ont.	Sask.	Ont.	Ont.	B.C.	1	Ont.	Man.	B.C.	N.B.	Man.
6.....	Man.	N.S.	Que.	Que.	Que.	1	Que.	Que.	Que.	Ont.	Que.
7.....	Sask.	Que.	N.S.	N.S.	N.S.	1	N.S.	N.S.	N.S.	Que.	N.S.
8.....	Alta.	N.B.	N.B.	N.B.	N.B.	1	N.B.	N.B.	N.B.	P.E.I.	N.B.
9.....	B.C.	P.E.I.	P.E.I.	P.E.I.	P.E.I.	1	P.E.I.	P.E.I.	P.E.I.	N.S.	P.E.I.

¹ Percentages negligible.

As further illustrating these differences, Table XXXVII, divides the immigrants resident in each province in 1931 into two classes, viz., foreign and British born. Frequent references to this division have been interspersed throughout the preceding text, but a brief *résumé* may not be out of place at this point. While for the Dominion, slightly over one-half of those born outside Canada came from British Empire countries, variation as between the provinces is very marked. In Saskatchewan and Alberta, British born constituted only about one-third of all resident immigrants and foreign born two-thirds, and in Prince Edward Island, British born represented fractionally over two-fifths and foreign born (including many from the United States) nearly three-fifths. Close to two-thirds of the immigration to Nova Scotia and Ontario, on the other hand, was of British origin and nearly three-fifths of that to British Columbia. In New Brunswick, Quebec and Manitoba, the distribution more closely approximated that for Canada as a whole, with New Brunswick favouring the British, and Quebec and Manitoba the foreign natives.

Comparison of the 1931 and 1921 figures in Table XXXVII provides further evidence of the declining importance of the British and the increasing proportion of the foreign born in the immigrant population of the country. This trend appears in all provinces save one (New Brunswick) and is most marked in Ontario, Manitoba, Quebec and Prince Edward Island. In these provinces the foreign born constituted a proportion of resident immigrants from 4.0 to 6.0 p.c. larger in 1931 than in 1921. Corresponding declines, of course, occurred in the percentages of immigrants of British birth.

The Extent to Which Each Province Has Shared in the Total Immigration.—Hitherto our discussion has centred on the proportions of various stocks in the population of each province, and more particularly of the foreign-born portions of specified stocks. It is interesting further to see how the provinces have been sharing in the actual number of immigrants coming to Canada. Table 33 presents this material for the British and foreign born.

Of the total, Ontario had over 44 p.c. of the British immigrants resident in Canada at the date of the last census; British Columbia came second with 16 p.c.; the Prairie Provinces had about 9 p.c. each. Ontario, thus, has resident within her boundaries more immigrants from the British Isles than the whole of Canada west of the Great Lakes. Quebec, with 9.4 p.c., is the only other eastern province which has any considerable number of British immigrants. The table also provides a statistical basis for the current opinion as to the very small percentage of British immigrants stopping in the Maritime Provinces. That this holds true for the foreign immigrants as well is made clear in the lower section.

During the last decade, the Maritimes as a whole and more especially Ontario and Quebec have been receiving a somewhat larger share of British immigration than in previous decades of this century, and the West, with the possible exception of Alberta, a smaller proportion. The change is even more marked in the case of the foreign born. Of the foreign immigrants who came to Canada between 1926 and 1931, and 1921 and 1925, 47.12 p.c. and 46.21, respectively, were resident in Ontario and Quebec combined in 1931, as against approximately 35 p.c. for those arriving between 1911 and 1921 and 26 p.c. for those arriving during the first decade of the present century. Almost exactly half of the foreign immigrants settling in Canada between 1921 and 1931 were domiciled in Eastern Canada at the date of the last census; this compares with 27.5 p.c. for those who arrived between 1901 and 1911. These figures direct attention again to one of the most significant changes which has taken place in our population structure during the past decade. As was mentioned above, Canada seems to be repeating the experience of the Republic to the south. As the more accessible free agricultural land is taken up, or when for any other reason agriculture becomes less attractive, immigration tends to concentrate in the urban centres especially of the more industrialized sections of the country. The last decade has witnessed just such a shift in the direction of Canadian immigration, and the weight of historical analogy suggests that it may be even more marked during the present decade unless some unforeseen and radical change occurs in the economic life of the nation.

TABLE XXXVII.—PERCENTAGES FOREIGN- AND BRITISH-BORN OF THE IMMIGRANT POPULATION, CANADA AND PROVINCES, 1921 AND 1931

Province	P. C. Foreign-Born		P. C. British-Born	
	1921	1931	1921	1931
CANADA.....	45-52	48-65	54-48	51-35
Prince Edward Island.....	54-59	58-38	45-41	41-02
Nova Scotia.....	32-15	35-24	67-85	64-78
New Brunswick.....	50-09	47-90	49-91	52-10
Quebec.....	52-35	55-98	47-65	44-02
Ontario.....	28-38	34-54	71-62	65-47
Manitoba.....	49-13	55-13	50-87	44-87
Saskatchewan.....	66-51	68-29	33-49	31-71
Alberta.....	63-64	64-43	36-36	35-57
British Columbia.....	38-30	40-62	61-70	59-38
Yukon and Northwest Territories.....	62-30	59-59	37-70	40-41

The present decade of moderate immigration, however, will not suffice to correct the unevenness created by a generation of foreign settlement largely directed toward the West. In 1931, Ontario with a 13 p.c. larger population than that of the four western provinces combined had only about two-fifths as many immigrants from foreign countries. Quebec, with a slightly smaller population had only about one-fifth as many foreign born, and the Maritimes one-twenty-fourth as many. An overwhelming majority of the immigrants of foreign stocks are still to be found in Western Canada with the result that the nativity as well as the racial composition of the population in the eastern and western parts of the Dominion is still radically different. In so far as differences in population composition make for differences in culture, using that word in the widest sense of the term, the material presented in this chapter would seem to merit very careful consideration by all who are interested in the problem of Canadian national unity.

Number of Immigrants in Each Province.—Before closing the present chapter reference should be made to the numerical distribution of the foreign born for a few of the important countries from which Canada draws her immigrants. This is done in Table 34. Little comment is necessary in this connection, for the facts are presented very clearly in the table. A few points however, are worthy of special notice.

Of the foreign born in Canada, more have come from the United States than from any other single country, and of those Alberta has the most, with Saskatchewan coming second and Ontario third. Of hardly less significance is the fact that in 1931, Alberta had nearly 21,000 fewer United States-born residents than in 1921, Saskatchewan 14,600 fewer and Manitoba 3,700 less—a net loss for the Prairie Provinces of over 39,000. The number of United States born in Eastern Canada, on the other hand, increased by upwards of 10,000, some 7,000 of this increase occurring in Quebec and 2,000 in Ontario. While the West lost heavily in this important class of immigrants the East gained; and of equal importance is the fact that 90 p.c. of the western loss was rural while 84 p.c. of the gain in Ontario and Quebec was in urban centres.

In 1931, immigrants from Galicia were included with those from Poland, so that in the last census the latter nativity ranks second in numerical importance among the foreign born. Over 88 p.c. of the Poles in Canada are in Ontario and the three Prairie Provinces combined, Ontario leading with 46,000 and Manitoba ranking second with 44,000.

The Russians are the third most important foreign nativity with half again as many in Saskatchewan as in any other province. Of the Italians who rank fourth, over half are in Ontario and another 23 p.c. in Quebec, leaving about 25 p.c. in the rest of Canada. *Relative to population*, this nativity is distributed more evenly between the provinces than any other of the important immigrant groups. The Chinese rank fifth in point of numbers and as has been pointed out, the majority are in British Columbia, though some are found in the urban parts of all nine provinces. Ontario has more immigrants from Germany than has any other province, the number there slightly exceeding that in Saskatchewan and being moderately larger than that in Alberta. The next in order of importance are the Austrians with major concentrations in Saskatchewan, Manitoba and Ontario. The Swedes and Norwegians rank eighth and ninth, respectively. British Columbia has the largest number of Swedes with Saskatchewan and Alberta following closely. The Norwegian born show even greater concentration in the three western provinces. Of the Finns who rank tenth among the foreign born, Ontario has nearly two-thirds and British Columbia about one-sixth.

CHAPTER V

URBAN AND RURAL DISTRIBUTION

It is important in studying assimilation to know which stocks tend to concentrate in rural districts and which congregate in urban parts. The influences of rural and urban surroundings are in many respects quite different, and a study of the rural and urban distribution of the various origins and of the foreign born, will be seen to throw considerable light on such questions as intermarriage, literacy, naturalization, infant mortality and many others.*

Certain outstanding questions present themselves in this connection. First, what peoples concentrate in urban districts and to what extent? Which stocks tend to congregate in large cities? How do the stocks differ in their rural and urban distribution as between provinces? Are the men or women more urban and why? To the above questions and to some others this chapter suggests answers.

It might be mentioned in passing that there are two extreme conditions respecting urban and rural distribution very unfavourable to the assimilation of the foreigner. First, rural isolation, and secondly, the tendency too often observed in large cities, for particular stocks to segregate in separate wards or districts. The study of this whole problem of segregation is postponed to the next chapter.

In order to avoid a confusing multiplicity of figures attention is centred on the percentage urban throughout this section. A high percentage urban for a given stock naturally implies a correspondingly low percentage in rural districts and *vice versa*. Such inferences as a rule are left to the reader. The distinction between rural and urban is that followed by the census; "urban" includes those living in all incorporated cities, towns and villages, while the balance of the population is tabulated as "rural".†

Percentage of Urban Residents among the Immigrant Population.—Table 35 gives the percentage urban of the immigrant population by countries of birth for Canada and for each province. Tables 36 and 37 group the European-born other than British and French into geographical and linguistic classes, showing the percentage urban for the total population in each group. Finally Table XLI presents a summary for specified groups of countries of birth.

Before proceeding with a detailed discussion one is reminded that during the past three or four decades there has been a radical shifting in the distribution of the Canadian population as between urban and rural districts. While in 1891 less than 32 p.c. of the population was urban, by 1931, 54 p.c. lived in incorporated cities, towns and villages. The change has been continuous throughout the period. During the last decade the proportion increased from 49.52 p.c. to 53.70 p.c. In this shifting of the population from rural to urban districts Canada is by no means unique. The same change has characterized virtually all western nations to a greater or less degree during the past century.

Fixing attention first on the broad *nativity* groups, it is seen that as a class the foreign born in Canada on the whole have a slightly lower percentage urban than the total population (Table 35, Col. 1). The same holds true of Europeans as a group—although there are many individual exceptions—and of the United States born. The Asiatics, on the other hand, are much more urban than the population as a whole. Taken as a group, they display a more marked propensity for urban life than any other major class of immigrants and the proportion would have been even higher were it not for the presence of large numbers of rural Japanese. It may be surprising to some to find the immigrants from the British Isles with 67.52 p.c. urban and those from the British possessions with 77.26 p.c. Whatever may have been the original intention on coming to Canada, it is significant that over two-thirds of the immigrants who have come to Canada from British countries were living in urban centres in 1931. Obviously, Continental European

*For a general discussion of the rural-urban problem in Canada see 1931 Census Monograph No. 6 by S. A. Cudmore and H. G. Caldwell. See also 1931 Census, Vol. I, Chap. II.

†For information respecting the policy followed by the individual provinces in the matter of incorporating towns and villages and the procedure followed in the census tabulations see 1931 Census, Vol. II, p. 139.

as well as United States immigration has included a larger proportion of agriculturists, while the majority of the British and Asiatics have followed commercial, manufacturing, professional and other urban occupations.*

North Western Europeans are appreciably less urban than those from South, Eastern and Central Europe. The percentage urban for the former group was 39.56 p.c., for the latter 54.63 p.c. Immigration from North Western Continental Europe was earlier; it has been and still is predominantly rural in domicile. The newer immigration from South, Eastern and Central Europe is more urban, nearly 55 p.c. being resident in incorporated cities, towns, and villages in 1931.

When the foreign born are classed in linguistic groups (Table 37, p. 789), the Scandinavians are found to be the least urban of all (34.58 p.c.). The German group, with a percentage of only 41.24 living in urban districts, ranks second. Of the Slavs and the Latins and Greeks, on the other hand, much larger proportions live in incorporated cities, towns and villages. The percentage for the former was 51.82 p.c. and for the Latins and Greeks 65.80 p.c.—just a fraction under the percentage urban for immigrants from the British Isles. Thus among the Continental Europeans, the Scandinavians are by far the most rural and the Latins and Greeks by far the most urban. Almost twice as large a proportion of the Latin and Greek immigrants as of the Scandinavian live in urban communities.

Turning now to a more detailed examination of the tables, attention is called to the peculiarities of the populations of specific countries of birth. Of the North Western Europeans, immigrants from France and Switzerland are the most urban; the Icelanders, Germans and Danes follow with between 40 and 46 p.c.; the Hollanders and Belgians are still less urban. The most rural of the immigrants from the northwest of Europe are the Swedes and Norwegians. Indeed, of all immigrants the Norwegians and Swedes show the largest percentages living in rural districts.

Of the immigrants from South, Eastern and Central Europe, the highest percentage urban is that of the Greeks; in fact, of all peoples coming to Canada, the Greeks display the most marked tendency to concentrate in urban districts. The Italians also have a very high figure, with almost 80 p.c. living in incorporated cities, towns and villages. These two are in a class by themselves, in comparison with the other South, Eastern and Central Europeans. Passing from the south to the east of Europe one finds that the Bulgarians, Yugoslavs, Czechs, Slovaks and Hungarians also show proportions considerably higher than the percentage urban for the total population. The Russians, Roumanians, Poles and Finns, on the other hand, are somewhat less urban than the population as a whole. The least urban of all South, Eastern and Central Europeans are those born in the Ukraine (42.90 p.c.). The Austrians with 45.90 p.c. stand next to the bottom.

The marked variation in the 1921 figures suggested that the tendency to urban life was associated with peculiarities of culture rather than of geographical origin. The 1931 data confirm this suggestion. Compare, for example, the marked uniformity in the Germanic group with the marked lack of uniformity in the Latin and Greek, where the two Southern European peoples show urban propensities radically more pronounced than do the other Central and Western European members of this sub-classification. Other things being equal, long Canadian residence also makes for a higher percentage urban. The higher figure for the Icelanders than for the other Scandinavians is a case in point. Two additional factors of a somewhat different sort, however, must also be given prominence in explaining either the 1931 figures or the change in percentages which has occurred between the two census dates: first, the changing capacity of rural and urban industry to absorb additional immigration, and second, the relative proportion that recent immigration from a given country constitutes of the total resident immigrant population of that nativity.

During the decade 1921-31, urban industries and urban occupations appear to have been able to absorb a much larger share of the new immigration than have the rural. As a matter of fact not only did they attract a disproportionate percentage of current immigration (nearly three-fifths of the total) but they appear to have suffered less from emigration of earlier immigrants and/or to have gained through a net rural-urban migration of pre-1921 rural immigrant settlers. At any rate, of the estimated net addition to the total foreign-born† population in Canada between 1921 and 1931 (i.e., actual immigration less emigration and deaths of immigrants) over 75 p.c. was urban,‡ with the result that while the percentage urban in the total population increased

*See Chap. XII.

†Including persons born in the British Isles and British Possessions other than Canada.

‡Hurd, W. B. and Cameron, J. C.: *Population Movements in Canada, 1921-31—Some Further Considerations*, The Canadian Journal of Economics and Political Science, Vol. I, No. 2, May, 1935, pp. 237-8.

from 49.52 p.c. to 53.70 p.c. or 4.18 p.c. that for the total foreign-born population increased from 45.68 to 51.42 p.c. or 5.74 p.c. These figures seem to leave no doubt that during the period, urban parts were appreciably more receptive to immigrants generally than were rural.

Of course, it may be argued that some of the increase in the proportion urban might have been occasioned by a greater concentration of new immigrant arrivals at the major urban distribution centres, pending the completion of arrangements for permanent settlement in the country. Mr. M. C. MacLean has shown that temporary immigrant residents represented a very considerable proportion of all immigrants domiciled in the eighteen largest cities of the Dominion in 1911.* Undoubtedly, there were some undistributed recent arrivals in urban centres in 1931, but their numbers were in all probability smaller than in 1921. Immigrants whose residence in Canada exceeded two and a half years could hardly be classed as temporary urban residents awaiting location in outlying parts, and though immigration was relatively heavier in the second half of the last decade as a whole than in the second half of the preceding one, immigrants with a half, one and a half, and two and a half years' domicile in Canada in 1931 were both absolutely and relatively less numerous than in 1921. Moreover, it has been shown that urban unemployment was practically non-existent in the summer of 1929† which indicates that immigrants who had arrived prior to that time had to all intents and purposes been economically absorbed by that date. Immigration during 1930 and the first five months of 1931 was on a very much reduced scale as compared with the last year and a half of the preceding decade. It is, therefore, reasonable to conclude that temporary concentration of new immigrant arrivals in large cities pending distribution to country points was no more important, and probably less so, in 1931 than in 1921. If such be the case, it follows that the higher percentage urban in 1931 is attributable to other causes such as those mentioned in the preceding paragraph and is indicative of an underlying change in the direction of immigration during the decade as a whole.

It is natural to suppose, therefore, that other things being equal, nativities showing relatively large additions through immigration over the ten-year period might be expected to show abnormally large increases in the percentage urban as well as generally higher proportions urban than obtained among similar immigrants who came to Canada during the earlier era of rapid rural expansion. The influence of these factors may be demonstrated from the records of individual nativities from South, Eastern and Central Europe and for purposes of convenience the pertinent data are tabulated below:—

TABLE XXXVIII.—PERCENTAGES URBAN OF THE POPULATION AND PERCENTAGE INCREASE IN URBAN AND TOTAL POPULATION IN THE DECADE, BY SPECIFIED BIRTHPLACE, CANADA, 1921-1931

Birthplace	P.C. Urban in		P.C. Increase in Decade in	
	1921	1931	Urban Population	Total Population
Austria.....	35-33	45-90	10-57	-35-01 ¹
Belgium.....	52-83	70-82	17-99	45-97
Czechoslovakia.....	41-42	58-51	17-09	428-34
Finland.....	33-31	50-99	17-28	149-70
Hungary.....	37-50	55-61	18-11	280-66
Poland ²	43-65	51-51	7-86	162-11
Russia.....	56-25	52-31	-3-94	13-21
Ukraine.....	41-85	42-90	1-05	21-10
Yugoslavia.....	49-69	61-14	11-45	780-00

¹ This decrease occurs because of mis-statement of birthplace in 1921.

² Including Galicia.

In the case of certain nativities, of course, other forces conceal and counteract the influence of the more urban character of recent immigration but a comparison of the data for Czechoslovakia, Finland, Hungary and Yugoslavia on the one hand with those for Russia and the Ukraine on the other illustrates the point. Relatively heavy immigration from the former countries during the decade is reflected in marked increases in their proportions urban; the reverse holds true with the Russians and Ukrainians.‡

*MacLean, M. C.: *Analysis of the Stages in the Growth of Population in Canada*. Dominion Bureau of Statistics, Ottawa, 1935.

†Cassidy, H. M., Heakes, A. G. and Jackson, G. E.: *The Extent of Unemployment in Canada, 1929-30*, Proceedings of the Fourth Annual Meeting of the Canadian Political Science Association, Vol. IV, 1932, pp. 5-20.

‡The Polish nativity classification includes Galicians as well as Poles. It was found in 1921 that the Galicians were the most rural while the Poles were the most urban of the Slavs. Immigration from Poland during the decade apparently included a large proportion of Poles (or Polish Jews). The large increase in the percentage urban for the Bulgarian nativity despite only moderate immigration suggests that the Bulgarian figures may have been rather strongly affected by rural-urban migration.

Urban and Rural Distribution as between Provinces.—Of all provinces in the Dominion, Prince Edward Island shows the largest percentage rural and Quebec the largest living in urban districts. The provinces with their respective percentages urban are arranged in order of rank below:—

TABLE XXXIX.—PERCENTAGES, URBAN AND PERCENTAGE INCREASE IN DECADE IN THE TOTAL POPULATION, ARRANGED ACCORDING TO RANK IN 1931, CANADA AND PROVINCES, 1921-1931

Province	P.C. Urban		Rank	Increase 1921-1931
	1921	1931		
CANADA.....	49.52	53.70		4.18
Quebec.....	56.03	63.10	1	7.07
Ontario.....	58.17	61.08	2	2.91
British Columbia.....	47.19	56.86	3	9.67
Nova Scotia.....	43.34	45.17	4	1.83
Manitoba.....	42.88	45.18	5	2.25
Alberta.....	57.88	58.07	6	0.19
New Brunswick.....	32.08	31.59	7	-0.49
Saskatchewan.....	28.90	31.58	8	2.66
Prince Edward Island.....	21.55	23.15	9	1.60

While the population of Quebec ranks first in respect of concentration in urban localities, that of Ontario comes a close second. It is interesting to see British Columbia in the extreme west coming third in the list. Among the Prairie Provinces, Manitoba is the most urban and Saskatchewan the most rural. In the Maritimes, Nova Scotia has the largest proportion of its population domiciled in incorporated cities, towns and villages.

The changes which have occurred during the past decade are equally significant. In 1921, Ontario ranked as the most urban province in Canada. By 1931, Quebec had assumed the lead. Taking the population as a whole, urbanization has been proceeding three to four times faster in Quebec and British Columbia than in Ontario, Manitoba and Saskatchewan and six to seven times faster than in the Maritimes generally. Nova Scotia and Prince Edward Island were the only provinces in the Maritimes showing any significant increase in the proportion living in urban centres over the decade. New Brunswick had a slight net decrease.

The distribution of the *foreign born* as between rural and urban districts is shown in the following table:—

TABLE XL.—PERCENTAGES URBAN AND PERCENTAGE INCREASE IN DECADE IN THE FOREIGN-BORN POPULATION, ARRANGED ACCORDING TO RANK IN 1931, CANADA AND PROVINCES, 1921-1931

Province	P.C. Urban		Rank	Increase 1921-1931
	1921	1931		
CANADA.....	45.68	51.42		5.74
Quebec.....	84.70	88.32	1	3.62
Ontario.....	72.09	71.58	2	-0.51
Nova Scotia.....	63.56	61.10	3	2.46
British Columbia.....	43.88	51.93	4	8.05
Manitoba.....	42.16	45.99	5	3.83
New Brunswick.....	42.64	40.06	6	-2.58
Prince Edward Island.....	25.33	30.55	7	5.22
Alberta.....	25.81	27.99	8	2.81
Saskatchewan.....	21.48	25.59	9	4.11

Except for the interchange of positions between New Brunswick and Manitoba the order of the provinces in the above table is precisely similar to that in 1921. In four provinces, New Brunswick, Quebec, Ontario and British Columbia, the *increase* in the percentage urban for the foreign born over the decade was less than that for the total population. The shift to the cities was thus less marked among immigrants from foreign countries than among natives. In Prince Edward Island, Nova Scotia and the three Prairie Provinces the reverse was the case, the *increase* in the proportion of immigrants living in urban centres exceeding that for the total population and by the same token being still greater than that for the Canadian born.

Any satisfactory explanation of the detailed variations in the percentage increases shown in this table or the preceding one, and any detailed quantitative comparison of the two sets of increases must take into account a multitude of factors among which might be mentioned, general differences in industrial structure, differences in the rates of expansion of important industries, recency of immigration of the foreign born, their age and sex distribution, country of birth, occupational preferences and so on. A more exhaustive study of the data is left to the interested reader.

Reverting again to Table 35, it is seen that in 1931 the foreign born were more urban than the Canadian born in the six eastern provinces and less urban in the three western provinces. Manitoba passed from the latter to the former category during the decade. The disparity in rural-urban distribution between immigrants from foreign countries and native Canadians is greatest in the more industrial provinces of the East, Quebec, Ontario and Nova Scotia. In the West, the differences are on the whole much smaller although in Alberta foreign immigrants are materially less urban than the rest of the population.

In every province immigrants from the British Isles are more urban than either the Canadian born or the foreign born (with the single exception of New Brunswick). Reference has already been made to the urban propensities of this class of immigrants. In the four western provinces, and particularly in Alberta and Saskatchewan, British immigrants are very much more urban than immigrants from foreign countries. In the East, the differences are much less marked. As in 1921, the significant fact seems to be that in Canada as a whole, immigration from Great Britain has settled in urban centres to a far greater extent than has immigration from foreign countries in general and this tendency, while *absolutely* less marked in the West than in the two large industrial provinces of the East, is *relatively* more pronounced, when compared with the generally smaller proportions of the population as a whole in urban districts. In Saskatchewan for example, foreign immigrants are appreciably less urban than the population as a whole, while the British Isles born are 50 p.c. more so. As with other nationalities immigrants from the British Isles in the aggregate became somewhat more urban during the decade, but there occurred a surprising lack of uniformity both in the magnitude and direction of the change as between the individual provinces. In Prince Edward Island, Quebec, Manitoba and Saskatchewan the increase was moderate; in British Columbia it was very marked. On the other hand, decreases in the percentage urban obtained in the case of the four other provinces. In Alberta, Ontario and Nova Scotia the decreases were small, but in New Brunswick it was quite substantial.

A few other striking facts are revealed when the analysis is pushed still further. The percentage urban of those immigrants coming from the South, Eastern and Central sections of the Continent is greater for every province than the proportions urban for immigrants from the countries of North Western Europe. Save in Prince Edward Island, Nova Scotia and Quebec, immigrants from North Western Europe are more rural than the population of the province in which they are domiciled and very much more so in Ontario and in the three far western provinces. In the three latter provinces the South, Eastern and Central Europeans are also much more rural than the total population, but from Manitoba east, they are decidedly more urban. The tendency for the South, Eastern and Central Europeans to concentrate to an abnormally marked extent in cities when settling in the more densely populated (and more industrialized) East was commented on when examining the 1921 data. Now Manitoba comes in this category. In Saskatchewan, Alberta and British Columbia they continue to be markedly more rural than the populations among whom they live.

Passing to the linguistic classification, similar differences are noted between the proportions living in urban and rural districts in the various provinces. The high percentage of 89-65 p.c. urban for the Scandinavian group in the province of Quebec represents a very small number of resident Scandinavians and is not at all typical of the group. In fact, figures of Scandinavians for provinces east of Manitoba should not be considered of great importance because of the exceptionally small numbers resident in these eastern provinces. In the West, Manitoba shows the largest proportion of Scandinavians in urban centres and Saskatchewan shows the smallest. In all parts of Western Canada the percentage urban is lower, and in Saskatchewan, Alberta and British Columbia much lower for the Scandinavians than that for the populations of their respective provinces.

Greater importance may be attached to the fluctuation of the percentages urban for the Germanic group because of their somewhat more even distribution throughout the country.

From Quebec east they are more urban than the population as a whole, but from Ontario west, and this includes the provinces where they are relatively more important numerically, they are resident in urban districts to a much smaller extent than the population generally.

Of all Europeans the Latins and Greeks are the most urban, and in all but two provinces of the Dominion their percentage urban is much higher than that for the province as a whole. Those provinces are Saskatchewan and Alberta, and the explanation is simple when the actual numbers are considered. In Saskatchewan in 1931 there were 272 immigrants born in Greece, 367 in Italy, and 10,598 from Roumania. Somewhat the same proportions obtained in Alberta. Now the Roumanians are a much more rural people than the Italians and Greeks, and with Roumanian immigrants constituting so preponderant a proportion of the total immigrants from Latin and Greek countries in those provinces, it is natural to expect that the figure showing the percentage urban for the Latin and Greek group (including the Roumanians) would be exceptionally low. Immigrants from Greece display a tendency to concentrate in cities to almost as marked a degree in Saskatchewan and Alberta as in other parts of the Dominion. In the three western provinces, Italians are less urban than in the East generally, but they are more urban than the population of the West as a whole.

The behaviour of the Slavic is of course, similar to that of the South, Eastern and Central European group, which they dominate numerically. From Manitoba east, immigrants from those countries show a disproportionate concentration in urban parts, while in the three western provinces they are more rural than the population generally.

Immigrants from Asia have larger percentages urban than all other classes of settlers, except those from Italy and Greece. Their percentage urban is uniformly high save in British Columbia where it is somewhat lower than in the other provinces because of the presence of a large number of Japanese engaged in market gardening and other rural occupations.*

Finally, United States-born immigrants coming to Canada, while on the whole displaying a less than average disposition to live in urban districts, in all provinces from Manitoba east congregate in incorporated cities, towns and villages to an appreciably greater extent than do the people among whom they have settled. From Saskatchewan west immigration from the United States has been directed to rural areas to an unusually marked extent.

TABLE XII.—SUMMARY SHOWING PERCENTAGES URBAN OF IMMIGRANT POPULATION, BY SPECIFIED GROUPING OF COUNTRIES OF BIRTH, CANADA AND PROVINCES, 1931

Group of Countries of Birth	P.C. Urban in									
	Canada	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	British Columbia
Total population.....	53.71	25.13	45.17	31.59	63.10	61.08	45.13	31.56	38.07	56.86
Total foreign born.....	51.42	30.55	61.10	40.06	88.32	71.58	46.99	25.59	27.09	51.93
British Isles.....	67.52	39.56	65.23	38.19	93.05	73.30	59.85	46.33	54.84	62.52
Europe.....	51.02	29.61	72.09	46.76	94.60	71.12	45.36	22.94	25.20	44.03
North Western Europe.....	39.56	26.32	50.44	27.52	88.01	49.42	41.69	20.65	24.89	43.99
South, Eastern and Central Europe.....	54.53	50.00	80.33	69.38	96.07	75.50	47.45	23.78	26.24	44.07
Scandinavian.....	34.58	26.79	40.83	26.90	89.65	50.20	44.80	19.05	23.24	43.49
Germanic.....	41.24	24.14	62.81	32.13	89.37	46.43	39.96	23.07	26.00	45.09
Latin and Greek.....	65.80	58.33	80.67	48.33	94.22	80.04	52.40	25.99	25.93	59.03
Slavic.....	51.82	30.00	78.40	79.72	95.79	78.74	46.53	23.44	25.07	38.20
Asia.....	74.68	93.94	93.10	83.33	95.95	89.61	83.22	67.27	79.33	65.27
United States.....	48.04	27.61	46.92	36.15	78.55	70.41	47.03	27.45	29.30	51.57

Urban and Rural Distribution by Sex.—Table 38 is presented for the purpose of showing the difference between the percentages of men and women living in urban districts, first, for the population as a whole and second, for the respective groups of immigrants. A cursory inspection of this table shows that where the percentage for urban males is large the percentage for the females is also large and *vice versa*; and also, that for immigrants from all but three countries the percentage of the females in urban districts exceeds the percentage of the males.† The

*See Chap. XII.

†The total for Asia shows a larger percentage urban for males than for females though in each of the individual activities the reverse obtains. The Japanese, both male and female, are much more rural than other Asiatics. At the same time Japanese women constitute a much larger percentage of all Asiatic women than do Japanese males of all Asiatic males. Their presence, therefore, had a disproportionate effect in reducing the percentage urban for all Asiatic females.

predominating tendency is obviously for females to congregate in urban communities to a considerably greater extent than males. The causes of this tendency are varied and it is impossible to weigh their relative importance. The following are suggested as possible contributories: the rigours of agricultural and pioneer life; the great mobility of male immigrants among whom large numbers either are unmarried or have left their families across the seas; male occupations, such as railroad building and maintenance, lumbering and mining, etc., which take men to the rural parts. From the women's standpoint there is greater opportunity for suitable work in urban districts. Such occupations as domestic service, restaurant work and mercantile, factory and professional pursuits of various kinds are open to women in urban centres. Further, matrimonial opportunities and social attractions may exert considerable influence. It is clearly quite impossible to express the relative importance of these forces in quantitative terms.

The explanation of the differences which occur between the several nativities in the matter of male and female preferences for urban or rural life, is even more difficult. They cannot be explained in terms of magnitude of the excess of males. There is a surplus of males in practically all groups and these surpluses vary in size, but no correlation is apparent between the percentage urban and the sex ratio. It is possible that some relationship might be found between length of residence in Canada and the tendency for the percentage of women to exceed the proportion of men, but it is improbable that length of residence in Canada is the main explanation. The basic cause is probably to be found in vocational and in cultural differences which are not subject to quantitative measurement. Interpretation of the table must be left to those who have first-hand knowledge of the cultural background and vocational preferences of immigrants from individual countries of birth.

A few interesting points of a more general nature, however, are worthy of notice. For the population as a whole the percentage of females living in urban districts is 4.41 p.c. greater than the proportion of males, and for all immigrants the difference is 5.82 p.c. It appears from these figures that immigrant women show a greater tendency to concentrate in urban districts as compared with male immigrants than do the women in the population as a whole as compared with the men in the total population. Moreover, the extent by which the females exceed the males in urban concentration is far greater for the North Western Europeans than for immigrants from South, Eastern and Central Europe. Indeed with the South, Eastern and Central Europeans the spread is smaller than that for the population as a whole, which implies that as compared with men from those countries unduly large numbers of women were living in rural parts. Among the linguistic groups the Scandinavians show the greatest difference, while those from Slavic countries show the smallest.

Finally, it is instructive to compare the percentage by which the proportion of females urban exceeded the percentage of males urban in 1921 and 1931. Data for the principal nativity groups are as follows:—

TABLE XLII.—EXCESS PERCENTAGE OF FEMALES URBAN OVER PERCENTAGE OF MALES URBAN, BY SPECIFIED GROUPING OF COUNTRIES OF BIRTH, CANADA, 1921 AND 1931

Group of Countries of Birth	Excess P.C. of Females Urban over P.C. of Males		Group of Countries of Birth	Excess P.C. of Females Urban over P.C. of Males	
	1921	1931		1921	1931
Total population.....	4.40	4.41	North Western Europe.....	7.98	8.07
Total immigrants.....	6.05	5.82	South, Eastern and Central Europe..	3.24	2.04
British born.....	5.67	6.03	Scandinavian.....	6.87	7.02
United States.....	8.51	9.28	Germanic.....	6.84	6.33
			Latin and Greek.....	5.03	2.06
			Slavic.....	3.68	1.72

For the population as a whole, the disparity between the sexes in the matter of urban concentration was practically identical in 1921 and 1931; for the immigrant born as a whole it was somewhat less in 1931. The decline for the immigrant born was confined to the South, Eastern and Central Europeans (including both the Latin and Greek and Slavic groups). For both sub-groups from North Western Europe the disparity increased as was also the case with the British and United States immigrants. The fact that the line of cleavage follows that between the old and the new immigration suggests that recency of arrival has something to do with these differences. This surmise commands a certain amount of statistical and theoretical support.

A study of the sex distribution and length of residence of immigrants from certain South, Eastern and Central European countries in 1921 and 1931, *e.g.*, Italy, Greece, Roumania, Hungary, etc., leads one to believe that immigration during the intervening decade included a relatively large proportion of women coming to join their husbands or to marry men of the same nativity who had preceded them to Canada. The rural-urban distribution of such females would naturally tend to parallel closely that of the males and to that extent their presence would make for a reduction in the disparity in the rural-urban distribution of the sexes in these nationalities. Immigration from South, Eastern and Central Europe during the period also included a considerable volume from countries which had only recently begun to send immigrants to Canada (*e.g.*, the new nationalities created by the Treaty of Versailles). In such immigration there was an unusually large percentage of unattached males and, as compared with earlier decades, disproportionately large numbers were attracted to urban centres in the industrial provinces of the East with a resultant increase in the proportion of males of those nationalities in urban parts. To the degree that this occurred, it would raise the percentage urban for the males and cause it to more closely approximate that for the females. With the older immigration, on the other hand, such influences were generally absent or of small importance and it is natural to suppose that with increasing familiarity with the ways of the country the attraction of the city would be increasingly felt by the females and a disproportionately large number would join the rural-urban exodus as was the case with the native Canadians. Whether or not these are the principal explanations of the differences is difficult to say. There seems to be no doubt, however, that such forces were at work and exerted an appreciable influence.

A good deal of repetition would be involved in duplicating the preceding analysis for the racial origin groups. Reference to the first two lines of Table 38 will show that immigrants as a group are much more urban than the population as a whole. Were the analysis pushed further it would also appear that the immigrant sections of the various stocks were generally more urban than the Canadian-born sections and also that the adult portions of each origin were more urban than the children. The latter phenomenon is associated with the higher birth rate in rural parts and less numerical inequality of the sexes among the adults. There is one origin table, however, which merits insertion in this section, *viz.*, Table 39, which shows the percentage of males and females 21 years and over resident in urban centres in 1931 for specified racial groups. These data will be used in connection with certain correlations in subsequent chapters of the monograph. The table is of present interest in showing that the tendency of females to congregate in urban centres exceeds that of males for the origin as well as the nativity grouping. Such exceptions as appear are either of negligible proportions or occur where the origin group has been recently augmented by a considerable volume of adult male immigration seeking industrial employment in urban centres.

The Extent to Which the Different Stocks Congregate in Large Cities.—Table XLIII shows the proportions of specified stocks in the twenty Canadian cities with a population of 30,000 and over in 1921 and 1931. Fig. 31 is a graphic presentation of the 1931 figures. Similar data for the foreign born are not available, so attention is confined in this subsection to the distribution of population by origins.

The second section of Table XLIII arranges the 1931 percentages in order of magnitude. Approximately 29 p.c. of the population of Canada now lives in cities of 30,000 and over. Twelve of the stocks listed show a more marked tendency to concentrate in the large cities. Of all origins the Hebrew is most metropolitan with 82.77 p.c. living in cities of over 30,000 inhabitants, a percentage exceeding that for the next highest stock, the Greeks, by approximately a third. The Hebrews had nearly three times as large a percentage in large cities as had the population as a whole; the Greeks, Bulgarians and Lithuanians over twice the percentage; the Chinese, Italians and Syrians between 50 and 100 p.c. larger proportions and the Japanese, Negro, British and Hungarian origins from 1 to 50 p.c. larger.

These figures throw a rather interesting light on the experience of many of the large cities in the United States and Canada. Those stocks which gravitate to the bigger centres in large numbers are very often found in quarters or wards. There are Hebrew sections, Italian sections, Chinese sections and Negro sections in a great many of the larger cities on this continent. One does not hear of a Scandinavian quarter or of a Dutch or German section of a city nearly so frequently. Segregation of particular stocks has important social and political consequences wherever it occurs and is undoubtedly an important influence retarding assimilation.

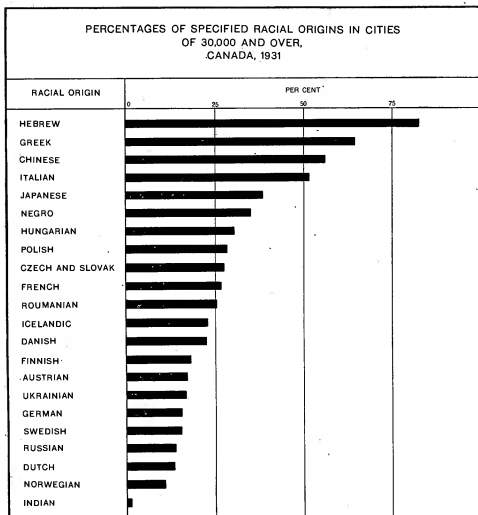


FIG. 31. The above graph presents data for the numerically more important non-Anglo-Saxon origins. Immigration has created not only marked inter-regional differences in the ethnic structure of our population but rural-urban differences of some dimensions. Approximately 29 p.c. of the total population was resident in cities of 30,000 and over in 1931 and 32 p.c. of the Anglo-Saxons.

Table 40 arranges the data by geographical and Table 41 by linguistic classification. The percentages for all Northern Europeans in cities of 30,000 inhabitants and over are smaller than for the population as a whole. In the case of the Norwegians, the Dutch and the Swedes, the tendency to avoid large cities is most marked. With the exception of the Greeks and the Italians, all the South and Eastern Europeans likewise show smaller proportions in the large cities than does the total population. Of the South, Eastern and Central Europeans, the Russians, Ukrainians, Austrians and Finns avoid the larger cities to an unusual extent. The percentages for Asiatic peoples are all higher than that for the population of Canada as a whole. Turning to Table 41 one finds considerable irregularity even within the linguistic groups. The Danish and Icelandic show much larger percentages in big cities than do the Norwegians and Swedes; in the Germanic group, the Belgian and German figures are appreciably larger than that for the Dutch. The Greeks and Italians have over twice the proportion shown by the Roumanians, and the figures for the Yugoslavs, Poles and Czechs and Slovaks are on a distinctly higher level than those for the Austrians, Russians and Ukrainians. Such differences are in part racial and cultural

in origin and in part attributable to a number of extraneous causes similar to those mentioned in previous sections of the present chapter. The interested reader should encounter no serious difficulty in tracing the effect of the more important extraneous influences. The matter is not of sufficient general interest to warrant its being pursued further here.

One final point of considerable significance is brought out by the present tables. An appreciably greater concentration in the larger cities was in evidence in 1931 than in 1921, both for the population as a whole and for all but seven of the thirty origin classes shown in Table XLIII. Where decreases occurred they were on the whole quite small; the increases on the other hand, were for the most part of quite significant dimensions. Indeed, in the case of certain groups largely affected by recent immigration such as the Bulgarian, Hungarian, Czech and Slovak and Finnish origins the proportions were very much larger than in 1921. The trend towards the larger centres appears to be affecting most of the racial elements in our population and is particularly noticeable among those currently receiving large additions through immigration.

TABLE XLIII.—PERCENTAGES OF SPECIFIED RACIAL ORIGINS IN CITIES OF 30,000 AND OVER, CANADA, 1921 AND 1931

Alphabetical Arrangement			Arrangement According to Rank in 1931				
Racial Origin	1921	1931	Racial Origin	1921	1931	Rank 1921	Rank 1931
	p.c.	p.c.		p.c.	p.c.		
All races.....	26.48	29.15					
British.....	29.17	31.89	Hebrew.....	84.40	82.77	1	1
French.....	23.36	26.79	Greek.....	65.38	64.71	2	2
			Bulgarian.....	24.19	61.42	14	3
Austrian.....	13.42	17.11	Lithuanian.....	65.03	58.13	3	4
Belgian.....	17.76	18.21	Chinese.....	47.09	56.16	5	5
Bulgarian.....	24.19	61.42	Italian.....	48.48	51.67	4	6
Chinese.....	47.09	56.16	Syrian.....	43.67	44.15	6	7
Czech and Slovak.....	11.13	27.56	Japanese.....	31.78	38.39	9	8
Danish.....	18.88	22.61	Negro.....	38.23	35.00	7	9
Dutch.....	12.36	13.42	Unspecified.....	33.84	33.82	8	10
Finnish.....	6.32	18.04	British.....	29.17	31.80	11	11
German.....	13.64	17.39	Hungarian.....	10.99	30.36	25	12
Greek.....	65.38	64.71	Yugoslavic.....	23.84	28.63	15	13
Hebrew.....	84.40	82.77	Polish.....	29.85	28.38	10	14
Hungarian.....	10.99	30.36	Czech and Slovak.....	11.13	27.56	24	15
Icelandic.....	16.57	22.97	French.....	23.36	26.79	16	16
Indian.....	0.98	1.07	Roumanian.....	26.33	25.39	12	17
Italian.....	48.48	51.67	Various ¹	26.23	24.21	13	18
Japanese.....	31.78	38.39	Icelandic.....	16.57	22.97	19	19
Lithuanian.....	65.03	58.13	Danish.....	18.88	22.61	17	20
Negro.....	38.23	35.00	Belgian.....	17.76	18.21	18	21
Norwegian.....	7.11	10.65	Finnish.....	6.32	18.04	29	22
Polish.....	29.85	28.38	German.....	13.64	17.39	20	23
Roumanian.....	26.33	25.39	Austrian.....	13.42	17.11	21	24
Russian.....	13.32	13.83	Ukrainian ¹	10.17	16.88	27	25
Swedish.....	10.92	15.35	Swedish.....	10.92	15.35	26	26
Syrian.....	43.67	44.15	Russian.....	13.32	13.83	22	27
Ukrainian ¹	10.17	16.88	Dutch.....	12.36	13.42	23	28
Yugoslavic.....	23.84	28.63	Norwegian.....	7.11	10.65	28	29
Unspecified.....	33.84	33.82	Indian.....	0.98	1.07	30	30
Various ²	26.23	24.21					

¹ Includes Bukovinian, Galician, Ruthenian and Ukrainian.

² Includes Eskimo, Other European, Other Asiatic and Various.

CHAPTER VI

SEGREGATION

Introduction.—The building of a homogeneous population and the speed and thoroughness of assimilation of immigrant peoples is dependent largely on the extent to which the constituent elements of our population are distributed over the inhabited parts of the Dominion and are in a position to intermingle with one another. Segregation whether rural or urban, voluntary or involuntary, constitutes one of the greatest obstacles to those personal and social contacts both permanent and temporary which alone can break down the barriers between peoples of different nativities and racial origins. In any study dealing with the aptitude of different peoples for acquiring Canadian customs and ideals and for fitting into the social, political and economic life of the nation, an adequate measure of evenness of spread, or its converse, segregation, is of first importance.

In this connection, evenness of spread is not a purely spatial or geographical concept. Many parts of the Dominion are quite uninhabited and even as between inhabited sections there is great variation in the density per square mile. These variations are attributable to widely recognized natural, economic and other causes and will doubtless tend to persist with minor modifications. To be of any value or significance from the present point of view, a measure of evenness of spread must, therefore, be related to the existing geographical distribution of the population as a whole. A racial origin or nativity group to be perfectly evenly spread among the population of the Dominion must not only have representation in every section of the country but that representation must conform, after making due allowance for difference in absolute numerical strength, to the relative distribution of the population as a whole over the inhabited area. An attempt has been made to construct such a measure for the several nativity and origin groups in our population and both the results and method will be presented later in this chapter.*

Before proceeding with the problem of measurement, something more should be said regarding the significance and implications of evenness or unevenness of spread.

In the first place, it is axiomatic that an even spread on the part of an alien people or minority among the inhabitants of a country affords an opportunity to intermingle with the rest of the population. No matter how free, how widely distributed or how well organized are the services of the press and the radio, the influence of these media can not supersede that of actual physical contact in promoting mutual understanding and appreciation among the constituent elements of a population. In the second place, the tendency in a minority group toward wide dispersion over the settled areas of Canada argues a measure of indifference to varieties of climatic conditions and occupations and indirectly a high degree of aptitude for adjustment to different physical and occupational environments. Again, since an immigrating people is much smaller in number than the population of the adopted country, evenness of spread indicates the absence of other than personal motives in immigrating. The more even is the spread, the more generally and permanently is an immigrating people placed in a minority position. Any influence it exerts must be by virtue of individual qualities rather than by virtue of numerical strength. Furthermore, in so far as evenness of spread is purely a volitional matter, it argues an absence of group consciousness and a readiness to identify personal interests with those of the country at large.

Clearly, the more evenly spread, the greater is the opportunity and probably also the necessity for intermarriage with the basic stocks of the adopted country. This is notably the case with single males migrating to or living in a district where no females of their own country of birth or racial origin are to be found. It will be shown in the next chapter that the peoples who are more evenly spread are also those who show the greater degree of intermarriage with other peoples. What is true of intermarriage logically follows in the matter of learning the official languages of the country and acquiring prevailing educational and other standards.

*The method was devised by and the computations done under the direction of Mr. M. C. MacLean of the Dominion Bureau of Statistics. The procedure was subsequently subject to extended critical examination and discussion by Mr. MacLean and the writer of the present monograph. The material in this chapter is almost entirely based on an unpublished paper by Mr. MacLean entitled *Penetration of the United States Born into Canada*.

Finally, it does not necessarily follow that where unevenness of spread or segregation occurs such segregation is primarily volitional or that it implies a conscious effort or inclination to avoid assimilative influences. Sometimes, of course, it does. There are examples of deliberately exclusive, highly group-conscious immigrant blocs in Canada. These, however, are exceptional. Moreover, the immigrant, as a rule, is by no means always a free agent moving as it were in a vacuum and selecting his home and occupation in accordance with his personal taste. Some, of course, are in an economic position where much freedom of choice is possible within the limits set by prevailing economic conditions, but with most, environmental factors exert a preponderant influence in determining both the place of settlement and the nature of employment. Consequently, evenness or unevenness of spread is usually only partly volitional. It is frequently and often to a large extent a function of conditions prevailing in the country at the time of and subsequent to settlement.

A Measure of Segregation by Country of Birth.—In approaching the practical problem of computing a measure of segregation one must first examine with some degree of precision the mathematical significance of certain general factors determining evenness of spread. For purposes of clarity the *propensity* to spread is defined as a quality or characteristic of a people, resulting from the possession to a greater or less degree of such attributes as the capacity to make a living under varied economic environments, a spirit of adventure and other individualistic qualities—enterprise, vagabondage, etc., and the absence of gregariousness. Its operation, of course is affected by economic conditions prevailing at and subsequent to the time of immigration to this country and by the policy of the agency, if any, promoting settlement.

The term *capacity* as applied to spread is here regarded as primarily a function of the size of a population group. The numerical strength of an individual nativity or origin group in Canada is a matter of accident almost entirely beyond the control of the individual members of that group, yet taking human institutions and relations as they are the world over, size sets definite limits to the amount of spread in the case of the numerically smaller nativities. For example, the Bulgarian nativity, numbering only 1,467 in Canada in 1931, could not be expected to spread as widely or as evenly as the United States born with a resident population of 344,574 and at the same time maintain normal family and other relationships. These limits are reflected in the statistical measures and allowance must be made therefor in any adequate index of segregation.

The amount of spread is sometimes a function of *necessity*. The latter concept is also directly related to size but it functions at the opposite end of the scale and operates in a directly contrary manner to *capacity* in that it induces rather than limits spread. The *necessity* to spread is well illustrated by the French Canadians in Quebec. The early French settlers farmed small adjacent strips of land and lived close together in more or less isolated communities. As population increased, the original holdings became too small and members of the group moved first to adjoining areas and soon to all parts of Canada and the Eastern States. This dispersion occurred despite the presence of a strong gregarious tendency. Another illustration is furnished by the recent behaviour of the Ukrainians in the West who settled in colonies on the land. The pressure of natural increase has led them not only to encroach on adjacent areas already settled by other nativities but to migrate to new areas in the North and even to congregate in adjacent urban centres. The above are two clear illustrations of the necessity to spread because of size. The Icelandic born furnish probably the best Canadian example of a people where small size has placed upon them no necessity to scatter.

In constructing an index which will more or less adequately reflect differences in the *propensity* to spread, allowance must be made for such extraneous factors as referred to under the terms *capacity* and *necessity*, or in other words the influence of the mere accident of size must be minimized or eliminated. This was attempted by the following procedure:—*

The index is based on the smallest areas for which data on birthplace are available—the county in the East and the census division in the West, of which there are 221† in all. Table 42 shows for the various countries of birth: (1) the total number of each nativity in Canada; (2) the average number of each nativity there would be in each county (or census division) if the population were equally distributed among these geographical units; (3) the number of counties

*Another extraneous determinant of spread is date of arrival or length of time in the country. This factor is no doubt an important influence, but it is generally so closely associated with size that it is difficult to measure separately.

†Lennox and Addington being regarded as one county.

with two or more times this average; (4) the number with the average but less than twice; (5) the number with less than the average but half the average or more; (6) the number with less than half; (7) the number with none. The counties, of course, are not of equal area nor is the population as a whole spread with equal density in different sections of the county. Consequently, the spread of the total population is shown in like manner and this spread is used as a control in deriving the index by a technique presently to be explained.

Other things being equal, the smaller the size of a nativity group, the greater will be the number of counties with no representatives from that nativity. Conversely, the larger the size of a nativity group the more counties there can be with two or three or more times the average number of representatives of that nativity. The method used in combining these data into an index is quite simple. For each nativity, the number in each of the Columns 3 to 7 (Table 42) were subtracted from the corresponding figures for the total population at the top, the results squared, added, divided by 221 (the total number of counties) and the square root taken. The final figures were then expressed as an index with that for Scotland as a base. The resulting index appears in Table XLIV and is presented graphically in Fig. 32.

The method tends to eliminate the influence of size since the heavy dependence of Column 7 upon smallness of size is counter-balanced by the dependence of the other columns, particularly Column 3 upon largeness of size. Scotland with the smallest standard deviation from the behaviour of the population as a whole shows the greatest evenness of spread or the least tendency to segregation. The Japanese show the greatest tendency to segregate and have an index of 247.1 as compared with that of 100.0 for immigrants from the former country.

TABLE XLIV.—A ROUGH INDEX OF SEGREGATION OF IMMIGRANTS FROM SPECIFIED COUNTRIES OF BIRTH, CANADA, 1931

(Based on data for counties and census divisions)

Birthplace	Index of Segregation	Birthplace	Index of Segregation
1. Scotland.....	100.0	15. China.....	139.0
2. Ireland.....	100.8	16. Sweden.....	139.0
3. England.....	105.6	17. Roumania.....	140.3
4. Wales.....	106.5	18. Norway.....	144.1
5. Denmark.....	111.9	19. Russia.....	144.2
6. France.....	114.4	20. Hungary.....	145.9
7. Holland.....	115.3	21. Italy.....	154.5
8. Switzerland.....	115.7	22. Finland.....	155.8
9. United States.....	117.8	23. Lithuania.....	162.1
10. Belgium.....	123.5	24. Greece.....	164.2
11. Germany.....	124.2	25. Yugoslavia.....	172.2
12. Austria.....	124.5	26. Bulgaria.....	215.8
13. Poland.....	128.6	27. Iceland.....	228.2
14. Czechoslovakia.....	132.2	28. Japan.....	247.1

Immigrants from Scotland show the least tendency to segregate or the greatest evenness of spread. The Japanese show the greatest tendency to segregate or the least evenness of spread.

A test discloses no correlation between the above index and the numerical strength of the several nativities and on the whole it seems to be a rather good rough measure for the purpose of scaling the different countries of birth in order of evenness of spread. Despite the absence of correlation with size taking the index as a whole, the high figures for the last four nativities are no doubt partly attributable to smallness of numbers. Size, however, can not have a very important influence on the index as a whole, e.g., France holds the sixth place with a population smaller than Yugoslavia which is in the twenty-fifth; Switzerland is eighth but immigrants from that country are fewer than from any one of the four at the bottom of the list except Bulgaria; while Italy is twenty-first, it ranks sixth in size.

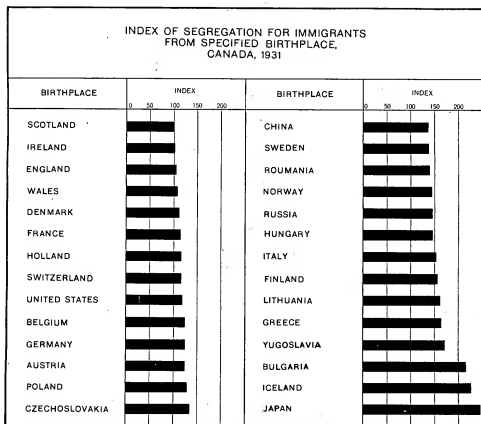


FIG. 32. The present index represents an attempt to measure *propensity to segregate*, i.e., the actual degree of segregation freed from the influence of differences in size of the individual groups. Considerable variation is seen to exist in the extent to which resident immigrants of the several nativity groups display this characteristic. Segregation, of course, is not solely a matter of group preference. Economic and other circumstances at the time of settlement and subsequent thereto are doubtless of importance in certain cases.

It will be noticed that certain gaps occur which enable one to divide the twenty-eight countries into groups, viz., (1) between Wales and Denmark; (2) between United States and Belgium; (3) between Czechoslovakia and China; (4) between Hungary and Italy. These groups do not follow linguistic lines with the exception of the first and most evenly spread which is predominantly English-speaking. With the exception of Norway, Sweden and Iceland, there appears to be a distinction between North Western and the rest of Europe. The case of Iceland is peculiar but understandable. The difference between China and Japan is striking.

The present index, of course, does not distinguish between rural and urban segregation but reference to Table 35 will enable the reader to determine which is the predominant type. For example, British immigrants are largely urban, and while they show greater evenness of spread than most other nativities such concentrations as do occur are found in urban centres. The Italian and Greek immigrants with 79.70 and 91.95 p.c. respectively, residing in urban parts and indices of segregation of 154.5 and 164.2 p.c., obviously tend to urban segregation and in a very marked degree. The Chinese are more widely scattered than the Japanese born; their major concentrations are urban while with the Japanese they are rural. The Icelanders are not only a rural people but they are noted for the extent of bloc settlement. The Swedish and Norwegian born are also rural but they congregate to a less marked degree. Of the Scandinavians, the Danish show the greatest evenness of spread. They also are predominately rural. Recent arrivals like the Bulgarians, Yugoslavs, Hungarians and Czechs and Slovaks show quite high degrees of urban concentration. And so the table may be analysed.

Since further use will be made of this index in other parts of this monograph additional comment seems unnecessary in this place.

A Measure of Segregation for Racial Origins.—Turning now to the problem of constructing an index of evenness of spread or segregation for the several origin groups in Canada, one finds that data are available not only by counties but by municipalities. The latter makes possible the construction of a much more reliable index for racial origins than for countries of birth. The mechanical work involved in following the same procedure with 5,049 instead of 221 unit areas, however, is prohibitive. An alternative method was, therefore, devised. It is briefly as follows:—

The percentages that each race constituted of the population of Canada as a whole and of each municipality were first determined. In the case of each race attention was confined to the municipalities where concentration was greater than the proportion that the race constituted of the population of Canada as a whole, these being the areas where abnormal concentration took place. The average of these positive deviations from the corresponding all-Canada average was then computed for each origin group. These averages constituted a crude measure of concentration but were still affected by limitations of size associated with the numerical strength of the several origins. The nature of these influences was discussed in the previous section. The different measures of concentration were accordingly ranked and correlated with the numerical strength of the resident Canadian population of each race for the purpose of eliminating the residual influence of size. The adjusted figures were then expressed as an index in terms of the figure for Scotland (100) as a base. The resulting index appears in Table XLV.*

*A few additional comments about the method might be of interest to those who are more mathematically-minded than the average reader. In constructing the index use was made only of the cases where the population density of a given race was equal to or greater than that of the population of Canada as a whole. For example, the Scottish race constitutes approximately 13 p.c. of the total Canadian population. If one thinks of the percentages of this race in the 5,000-odd municipalities as arranged in an array in order of size, only those cases where the Scottish represent 13 p.c. or over were made use of. It would have been equally possible with appropriate changes in the method to construct an index using only the cases where the race constituted less than 13 p.c. Interest, however, is focussed on concentration rather than its absence and besides less mechanical work was involved in using the upper portion of the array because of generally fewer cases.

Were the Scottish absolutely evenly distributed throughout the population of the Dominion each municipality would show exactly 13 p.c. of that race. This situation might be represented geographically by a rectangle with each unit on the base or the horizontal axis representing one municipality (of which there are some 5,000-odd) and with the vertical units representing percentages. Departure from evenness of distribution is indicated by departure from the rectangular-shaped area. The cases of greater than average density pile up on the right to form a triangular-shaped area superimposed on the right-hand section of the rectangle. It is the size and shape of this triangle which is used as a starting point in computing the index. There is, of course, a triangle of equal area but of different shape to the left of the point of intersection of the curve formed by the array and the horizontal line of 13 p.c. The greater the concentration in the cases to the right of the point of intersection, the greater will be the deficit to the left. If concentration is very great in only a few municipalities the triangle will be tall and have a small base. If concentration is not far from normal a low triangle with a long base will be formed. Obviously, a tall triangle with a short base indicates greater unevenness of spread than a low triangle with a large base. An adequate index of segregation then must take into account not only the size of the triangle but the size of the base, and this is in substance what was involved in the procedure followed.

The average deviation was computed for the percentages exceeding the average (13 p.c.) and this was divided by the number of cases where the density exceeded the all-Canada average. Other things being equal, the greater the average deviation, the greater the average departure from evenness or the greater the segregation. The average deviation, therefore, occurs in the numerator of the crude measure of concentration in its initial form. Conversely, other things being equal, the smaller the number of cases in which the excess concentration is found, the greater the degree of segregation, and the larger the number of cases the less the segregation. This figure appears, therefore, in the denominator and we have the average of the excess deviations divided by their number as a first crude index of unevenness of spread. By the use of the percentage which the race constitutes of the total population as a norm from which to compute the deviations, allowance is made in a general way for the factor of size, and any remaining influence of this character is eliminated by correlating the crude index with the numerical strength of the various races, a device which is in quite common use. The converting of the adjusted figures into an index with that for the Scottish as a base is a matter of mere mechanics.

There is one assumption in the above procedure which requires special notice. The percentages from which the average deviation was computed were derived from municipal data. Each percentage was given equal importance yet the municipalities varied in numerical as well as geographical size. The latter is not important because the purpose is to measure the distribution of the several races in terms of the existing geographical distribution of the population as a whole. The inequalities in numerical size, however, do introduce a potential source of error. One is really considering as units of equal importance percentages based on units of varying magnitude. At first glance, it might appear that more accurate results would be obtained by weighting. The number of samples, however, was large in every case, and in such circumstances one has the assurance of Professor Bowley that the unweighted figure will very closely approximate the weighted average. Besides, the weighting of the different percentages according to the relative numerical size of the municipalities on which they were based would introduce a different type of error even more serious than that involved by using the unweighted average. For if one were to give the percentage for one of the large municipalities the weight say of ten, the assumption is that if this municipality were divided into ten equal parts each of the parts would show the same proportion of a given race as the municipality as a whole. Were this the case, the net effect of the weighting would merely be to increase the size of the sample and the sample is large enough as it is. However, such is not the case and to follow that procedure would be to introduce an assumption which is contrary to fact in order to eliminate an error which considering the number of cases involved is negligible.

TABLE XLV.—INDEX OF SEGREGATION FOR RACIAL ORIGINS, CANADA, 1931

(Based on data for municipalities)

Racial Origin	Index of Segregation	Racial Origin	Index of Segregation
1. Scottish.....	100.0	11. Russian.....	288.9
2. English.....	104.3	12. Czech and Slovak.....	292.1
3. French.....	105.0	13. Polish.....	307.6
4. Irish.....	105.2	14. Roumanian.....	339.1
5. Welsh.....	146.9	15. Hungarian.....	404.4
6. Scandinavian ¹	174.0	16. Ukrainian.....	540.0
7. German.....	175.7	17. Finnish.....	617.4
8. Dutch.....	188.7	18. Italian.....	808.7
9. Austrian, n.o.s.....	220.9	19. Indian.....	845.5
10. Belgian.....	260.0	20. Hebrew.....	895.7

¹Danish..... 110

Swedish..... 143

Icelandic..... 156

Norwegian..... 183

n.o.s.—not otherwise specified.

Based on county and census division data only. Separate data by municipalities not available.

It is believed that the above index is a fair measure of evenness of spread or degree of concentration for the different races. It will be noticed at once that the range is much greater than in the index computed (by a different method) for the several nativities. The latter was merely a rough approximation based on 221 counties and census divisions, but apart from the inherently greater reliability of the present index by origins, there are several reasons why the latter should show a wider variation. In the first place, the use of municipal data as a base would tend in itself to emphasize the attribute of concentration because where segregation occurs it is naturally more marked in a population unit, the size of a municipality than in a county or census division, just as it would be more in evidence in county data than in figures covering the province or the Dominion as a whole (with the possible exception of the French whose numbers in Canada are so large that solid French blocs extend over quite large areas). Another reason is that country of birth and origin data do not coincide. For example, the Hebrew is the most concentrated as a race, but his presence in the nativity data increases the evenness of spread for the countries of birth from which he comes, e.g., a Hebrew from Poland is found in urban Quebec while Poles from the same country are found in other parts of the Dominion and Ukrainians from Poland in still another. The Ukrainians as a race tend to concentrate, but this concentration adds to the evenness of spread of those of Polish, Roumanian and Russian nativity. A third and more obvious reason for the greater range in the origin index is the choice of the Scottish as a base (100). The Scots as a race were much less concentrated than immigrants from Scotland. In constructing an index, when one reduces the size of the base one automatically increases the relative for such other members of the series as have not moved. The figure for the Japanese is, therefore, higher by virtue of the fact that the Scottish as a race are much more evenly spread among the Canadian population than are immigrants from Scotland.

Reverting to a brief examination of the index itself, it is seen that the Hebrews show the highest degree of segregation. The North American Indians come next and the Italians follow. The Finnish, Ukrainian, Hungarian, Roumanian, Polish, Czech and Slovak and Russian origins follow the Italians in descending order. Not one North Western European race is in the second half of the table, and only one South, Eastern and Central European, the Austrian, n.o.s., is in the first half. As was shown in the Introduction, the numerical strength of the latter group is small and most of them are of German extraction. The Anglo-Saxons and French show the greatest evenness of spread and the least tendency to segregate. Of the alien stocks, the Scandinavians as a whole are the least concentrated and the German and Dutch origins only slightly more so. Figures appearing at the bottom of the table for the individual Scandinavian races, are based on county and census division data and are not so reliable as the indices in the table proper derived from municipal statistics. They were computed for use in other sections of this monograph and are the best obtainable from existing tabulations. As in the case of the nativity index, reference to Chapter V will show whether segregation is predominantly rural or urban.

INTERMARRIAGE

Introduction.—The study of the varying extents to which intermarriage has occurred between the different stocks included in the population of Canada is as complex as it is important. The first type of difficulty arises because of the limited data which are available. The census does not publish a separate classification of husband and wife by origins; consequently a direct approach to the study is impossible. An alternative method would be to analyse the marriages in the census year; but even were the records of origins included in the provincial official notices of marriage, it is doubtful whether the intermingling of different stocks, as indicated by such data, would be representative of the total amount of intermarriage which had taken place. It would obviously be wrong to assume that the rate applying in 1931, which marriage data for that year might supply, would be applicable to Canadian residents of long standing who had contracted their marriages in earlier years. Further, on account of the varying inflow of immigrant peoples, marriages in any given year would be unreliable as a guide to the total amount of intermarriage. This is especially true of recent decades with their great fluctuations in immigration. However, even if these objections to the use of marriage data as an index of assimilation did not exist, such procedure is impossible, since information as to origin is not available in the marriage returns.

The alternative source of information, on which of necessity this study has been based, is the origin of the parents of children born in Canada in the year 1931, as given in the Annual Report *Vital Statistics 1931* of the Dominion Bureau of Statistics. The use of these figures has many advantages: first, it is not open to the objections applying to marriage data. The parents of the children born in 1931 are much more representative of the married population with respect to origin than are the young people who were married in that single year. Further, such data are not so sensitive to the inflow of immigrant population. And finally, there were over three times as many births as marriages in the year 1931. The actual number of legitimate births reported in all Canada in the year of the census was 232,263. For only 600 of those, the origins of the parents are not given, leaving approximately 231,600 married men and women of child-bearing age as the subject of study. It is suggested that this number is sufficiently large and sufficiently representative, at least for the earlier sections of this analysis.

There are, however, certain drawbacks to the use of these data as a measure of intermarriage. In the first place, it leaves entirely out of account the infertile marriage. This omission is probably not so serious in Canada as it would be in the United States or Great Britain and certainly not adequate to seriously distort the picture. There is a second difficulty which theoretically might well introduce a bias of sufficient magnitude to command recognition. It is possible, indeed probable that, with certain stocks ethnic endogamous marriages are more fertile than exogamous marriages, not for any biological reasons but "because of a greater conservatism and ignorance of the type of people entering into the former marriages". To the extent that this obtains the rate of exogamous marriage would be under-stated and that of endogamous marriage over-stated in the statistics.* There appears to be no direct method of measuring the possible extent of such influence with available data but its probable incidence and some idea of its relative importance may be determined by deductive methods. In the case of exogamous marriage between stocks which are closely allied culturally and between persons in more or less similar economic and social classes, the effect on the birth rate would in all probability be negligible. In this category might come marriages between persons of the several Central European origins, or between the Scandinavians and the British, or the Italians and the French. Only where high-birth-rate peoples married into low-birth-rate stocks with a generally higher standard of living would there likely appear any marked lowering in fertility. If this reasoning be correct, it follows that the principal danger of bias in the data would be confined to intermarriage between the high-fertility stocks of South, Eastern and Central Europe and the Anglo-Saxons. For reasons discussed in the latter part of the present chapter it seems extremely unlikely that any probable

*This and the preceding difficulty was referred to by Dr. Niles Carpenter when reviewing the 1921 Monograph in the *Journal of the American Statistical Association*.

bias of this nature is in practice of sufficient magnitude to appreciably affect the results. In any case it would not vitiate comparisons between data for the two census dates because, if it was operative at all, it operated both in 1921 and 1931.

In view of the great detail in which the data for 1921 were analysed in the previous monograph* the analysis in the first part of the present chapter is confined to totals for the linguistic and geographical groups, special attention being paid to the changes which have occurred during the decade.

The Tendency to Marriage within the Same Origin Group.—In 1921, the province of Quebec still compiled and published its own vital statistics and the reports of that province were not comparable with the figures for other provinces as compiled and edited by the Dominion Bureau of Statistics. Since 1926, the vital statistics for Quebec have been on the same basis as those for the other provinces under the Bureau. In the present study, figures for all Canada are used, while in 1921, the basic data included only the Registration Area (Canada excluding Quebec). The figures for the two census years, therefore, are not strictly comparable yet their behaviour is on the whole so consistent as to confirm the general findings in the earlier study in a rather remarkable manner.

Colour and the cultural differences associated therewith again appear as the greatest of all barriers to intermarriage. The parentage of children born in 1931 indicates that some 92.2 p.c. of the males and 96.2 p.c. of the females in the average coloured race were married to persons of the same origin as against 93.8 p.c. and 94.7 p.c. in 1921, the percentages in both cases being based on figures for the Chinese, Japanese, Negroes and Indians.

As a class, both the men and women of South, Eastern and Central European stocks still show much higher percentages married to persons of the same racial origin than do the North-Western Europeans (Table XLVI). During the last decade, endogamous marriages have declined appreciably for both geographical groups, the decline being most marked for the North-Western European males and the South, Eastern and Central European females.

The relative position of the linguistic groups is precisely similar to that in 1921. In all cases endogamy has decreased. The extent of the decrease has been by far the greatest with the Scandinavians.† In 1921, 57.3 p.c. of the married males of that group were married to women of the same race; in 1931 only 45.8 p.c.; and the decrease for the females was almost as great. The dissimilarity between the linguistic groups in the matter of endogamous marriage is not only large but actually has increased during the decade. In 1931 the proportion of men of Scandinavian origin who had intermarried with other origins (54.2 p.c.) was over three times greater than that for the Slavs (17.6 p.c.) and more than twice that for the Latins and Greeks as a group (25.9 p.c.). Similar differences obtain with the females.

The high proportion of endogamous marriages for the women of Latin and Greek origin is still an outstanding characteristic of the figures and reflects among other things not only the continued existence of a relatively large surplus of males, but a relatively high degree of segregation.

Contrary to the findings in 1921, ethnic endogamy among Scandinavian females was more marked than among males of the same racial group. This reversal is doubtless associated with the resumption of immigration from Denmark, Sweden and Norway in the post-War decade (see Chapter II). As in 1921, the women of Germanic derivation tend to marry out somewhat more frequently than do men of the same origin and by 1931 the women of the Slavic races as a group came into the same category. There was little or no change in the number of males per one hundred females during the decade in the case of the Germanic racial origins as a group, a circumstance which would lead one to expect consistency of behaviour from persons in that classification. For the Slavic origins as a whole, however, the surplus of males more than doubled in the ten-year period and on the same basis one would have expected the women of these origins to have continued marrying within their respective ethnic groups to a greater extent than the men.

*Op. cit., Chap. VI.

†The increase in intermarriage for the Germanic peoples was probably somewhat greater than the figures suggest because of the presence of more Austrian and other Eastern European-born Germans among those who reported themselves of Germanic racial origin in the 1931 returns. The prevalence of mis-statement of race was doubtless less marked in the Vital Statistics of 1931 than in the census of that year, and because of differences in cultural background and more recent arrival endogamy was certainly more prevalent among Germans from Austria and Russia, for example, than among other German residents of Canada. For analogous reasons the percentage of endogamous marriage for the Slavs was probably lower than it should have been in 1921 and the indicated decline during the decade was somewhat too small. In 1921, some Slavs reported themselves as married to Slavs when they were really married to Germans—the German mates not wishing to have their true origin reported.

Obviously the explanation must be sought elsewhere than in sex distribution. Were it practicable to pursue the matter further it would probably be found that unusually larger numbers of Canadian-born and -educated young women of Slavic parentage have joined the rural-urban movement which occurred during the decade, leaving the farm where they were relatively isolated and frequently racially segregated for domestic, clerical or factory work in the more cosmopolitan industrial centres. It will be shown below that, while under existing conditions urban residence *per se* may not favour intermarriage in the case of females of the average foreign race, a reduction in the degree of segregation has a potent influence in promoting inter-racial unions.

A number of minor changes affecting individual races have also occurred. Some are attributable to the accident of small numbers, others are subject to explanation in terms of immigration, emigration, rural-urban migration and other population changes during the decade. In general, however, the situation is much the same as in 1921. Assimilation by intermarriage has proceeded much further with the North and Western Europeans than with the South, Eastern and Central Europeans, and with the Scandinavian and Germanic peoples than with the Slavs and Latins and Greeks. The increase in intermarriage has been considerable for all major groups during the decade.

TABLE XLVI.—PERCENTAGES OF ENDOGAMOUS MARRIAGES, BY GEOGRAPHICAL AND LINGUISTIC GROUPING OF RACIAL ORIGINS¹ AND SEX, CANADA, 1921 AND 1931

(As indicated by the percentage of children born in Canada in 1931 and in the Registration Area² in 1921)

Racial Origin Group	1921		1931	
	Males	Females	Males	Females
	p.c.	p.c.	p.c.	p.c.
North Western European.....	66.7	65.7	62.2	62.4
South, Eastern and Central European.....	83.8	86.3	81.6	82.0
Scandinavian.....	57.3	56.4	45.8	47.9
Germanic.....	70.8	69.3	68.0	67.1
Latin and Greek.....	77.8	92.4	74.1	88.2
Slavic.....	85.2	85.6	82.4	80.6

¹ The percentages for the different groups refer to persons marrying within their own race. Intermarriages with other races within the same geographical or linguistic group are not included.

² Canada excluding Quebec.

ASSIMILATION BY INTERMARRIAGE WITH THE BRITISH AND FRENCH

Intermarriage with Those of British Origin.—More important than intermarriage generally from the standpoint of assimilation is the progress made in intermarriage with those of British and French origin. As in the former section, the discussion will be confined to the broad geographical and linguistic groupings.

Table XLVII tells a story similar to that in the preceding section. During the decade, the percentages for intermarriage with the British increased all around and for certain stocks by very considerable amounts. The figures for the Scandinavians, for instance, increased many times more than that for any of the other groups. By 1931, the indicated proportion of North Western European married males who had married into the British stocks was five and a half times greater than that for the South, Eastern and Central European married males, and for the women, nearly six times greater. Intermarriage with the British has proceeded ten times further for the Scandinavians than for the Slavs. Another notable feature of the table is the apparent increase in the number of both Latin and Greek and Slavic women who are marrying Anglo-Saxons. Though the proportion is still very small, it appears to be increasing faster than that for the males of the same group and probably for reasons mentioned in the latter part of the preceding section.

Another interesting aspect of the situation is brought out in Table XLVIII. Of the decennial increase of 4.5 p.c. in the proportion of married males of North Western European origins marrying outside their races, 3.2 p.c. or between two-thirds and three-quarters married British; in the case of the women of this geographical group of origins, increased intermarriage with men of Anglo-Saxon extraction was more than adequate to account for the total increase in intermarriage indicating a net relative decline in intermarriage with non-British stocks. What has been said of the North Western Europeans as a whole is peculiarly characteristic of the Scandinavians.

In the case of the *males* of this group nine out of every ten additional exogamous marriages were with Anglo-Saxons; for the *women* of this group, while the number married to Anglo-Saxons was 9.0 greater per hundred married women, total exogamous marriages were only 8.5 greater per hundred at the close of the decade.

With the South, Eastern and Central Europeans as a whole the situation was quite different. Inter-marriage with the British accounted for less than one-seventh of the increase in exogamy among males and only one-half in the case of the women. These figures, however, do not tell the whole story. Such increase as is occurring in inter-marriage is with stocks other than the British for the *males* of Latin and Greek origins and the Slavs of both sexes but the same is not true of the Latin and Greek women as a group. Though inter-marriage of Latin and Greek women has not progressed far on the whole up to the present time, practically the entire increase of the past decade is attributable to marriages with Anglo-Saxons. Reasons for certain of these differences are suggested in subsequent sections of the chapter.

Before leaving this phase of the analysis, attention is drawn to the absolute magnitude of the figures on inter-marriage with persons of British origin. Important as are the differences between the various stocks in the relative degrees to which they have mixed and are mixing with British stock, the absolute magnitude of the proportions is of as great, if not greater, significance, for they indicate the amount of assimilation by marriage which has already taken place. Assimilation by this means has made some progress among most of the North Western European peoples. It has scarcely begun with the South, Eastern and Central Europeans. About one-third of the men and women of Scandinavian origin and over one-fifth of those of Germanic origin had inter-married with British stock by 1931, as against less than 4 p.c. of the Slavs. About one-tenth of the Greek and Italian married men had married Anglo-Saxons, but only one in twenty of their women had taken husbands from the British stocks. The possibility of a certain amount of bias owing to reduced birth rates on the part of persons of Slavic and Latin and Greek origins marrying Anglo-Saxons was mentioned in the Introduction to this chapter and is discussed in the subsequent section on assimilability with the British. After making all reasonable allowance for such a possibility it still seems apparent that many of the ingredients in Canada's "melting pot" have as yet scarcely begun to dissolve in so far as inter-marriage with the basic Anglo-Saxon stocks is a criterion.

TABLE XLVII.—PERCENTAGES OF MARRIED MEN AND WOMEN OF CONTINENTAL EUROPEAN RACIAL ORIGINS MARRIED INTO BRITISH STOCKS, BY GEOGRAPHICAL AND LINGUISTIC GROUPING OF ORIGINS¹, CANADA, 1921 AND 1931

(As indicated by the percentage of children born in Canada in 1931 and in the Registration Area in 1921)

Racial Origin Group	1921		1931	
	Males	Females	Males	Females
	p.c.	p.c.	p.c.	p.c.
North Western European.....	21.3	22.3	24.5	25.8
South, Eastern and Central European.....	4.2	2.1	4.5	4.4
Scandinavian.....	22.2	24.7	32.3	33.7
Germanic.....	20.5	21.4	21.8	23.4
Latin and Greek.....	10.6	1.3	10.7	5.2
Slavic.....	2.7	2.4	2.0	3.9

¹ See footnote 1, Table XLVI.

TABLE XLVIII.—INCREASE IN THE PERCENTAGES OF MARRIED MEN AND WOMEN OF EUROPEAN RACIAL ORIGINS (1) MARRIED OUTSIDE THE RACE AND (2) MARRIED INTO BRITISH RACES, BY GEOGRAPHICAL AND LINGUISTIC GROUPING OF ORIGINS¹, CANADA, 1921 AND 1931

(As indicated by the percentage of children born in Canada in 1931 and in the Registration Area in 1921)

Racial Origin Group	Increase in Percentage Married			
	Outside Race		Into British Stocks	
	Males	Females	Males	Females
North Western European.....	4.5	3.3	3.2	3.5
South, Eastern and Central European.....	2.2	4.5	0.3	2.3
Scandinavian.....	11.6	8.5	10.1	9.0
Germanic.....	2.8	2.2	1.3	2.0
Latin and Greek.....	3.7	4.2	0.1	4.1
Slavic.....	2.8	5.0	0.3	1.8

¹ See footnote 1, Table XLVI.

Intermarriage with Those of French Origin.—Table XLIX shows the amount of intermarriage which has taken place between persons of Continental European origins and the French. The figures for 1921 are based on the Registration Area; those for 1931 are for Canada including Quebec. The inclusion of Quebec in the data for 1931 introduces a potential error of first magnitude when comparing the figures for the two dates because such a large proportion of the French of Canada are domiciled in that province. The error is only considerable, however, where a significant proportion of a foreign stock is also resident in that province as in the case of persons of Greek and Italian derivation. Since a large number of persons of the latter origins have settled in the urban centres of French-speaking Canada, intermarriage between the males of these races and women of French racial origin had doubtless already attained a measure of importance prior to 1921. The indicated increase in intermarriage as shown by a comparison of the 1921 and 1931 figures should, therefore, be greatly discounted. The same does not apply to anything like the same degree to the other linguistic groups. With that single exception which is attributable to lack of comparability of the figures, the situation with respect to intermarriage between alien stocks and the French is very similar to that in 1921 save for consistent though absolutely small increases all round.

For the North Western Europeans as a group intermarriage with the British had proceeded seven to nine times further than with the French by the date of the last census and for the South, Eastern and Central Europeans two to four times further.* These differences are in part a matter of relative numerical strength of the British and French races in Canada, in part a matter of geographical distribution of the different origins and partly a matter of racial preference, using the term "racial" in its widest connotation. It is interesting to notice that, as in 1921, the relative amounts of intermarriage for the males of the Scandinavian, Germanic and Latin and Greek origins follow the reverse order in the two tables (Tables XLVII and XLIX). That is to say, those who have married least with the British have married to the greatest extent with the French and *vice versa*.

Table L serves as an index of the total amount of assimilation by intermarriage of the Continental European races with the basic stocks of the country and because of its summary character merits careful perusal.

*The difference between the amount of intermarriage of alien stocks with the British and the French is under-stated to the extent that birth rates were excessively reduced by intermarriage with the British thus curtailing in like measure the chances of persons who had contracted such marriages appearing as parents in the 1931 birth statistics. One would expect the most marked decline in births where high-fertility races like the South, Eastern and Central Europeans married Anglo-Saxons. Birth rates would not be reduced to anything like the same extent (if at all) by the intermarriage of such races with the French, since the French are also among the high-fertility stocks in the Dominion (See Chap. XIII).

TABLE XLIX.—PERCENTAGES OF MARRIED MEN AND WOMEN OF CONTINENTAL EUROPEAN RACIAL ORIGINS MARRIED INTO FRENCH STOCK, BY GEOGRAPHICAL AND LINGUISTIC GROUPING OF ORIGINS, CANADA, 1921 AND 1931
(As indicated by the percentage of children born in Canada in 1931 and in the Registration Area in 1921)

Racial Origin Group	1921		1931	
	Males	Females	Males	Females
	p.c.	p.c.	p.c.	p.c.
North Western European.....	2.7	2.3	3.5	2.8
South, Eastern and Central European.....	1.0	0.4	2.1	1.0
Scandinavian.....	1.9	1.7	3.1	2.4
Germanic.....	2.8	2.4	3.5	2.9
Latin and Greek.....	2.9	0.2	7.1	1.5
Slavic.....	0.5	0.4	1.1	0.9

¹ See footnote 1, Table XLVI.

TABLE L.—PERCENTAGES OF MARRIED MEN AND WOMEN OF CONTINENTAL EUROPEAN RACIAL ORIGINS MARRIED INTO FRENCH AND BRITISH STOCKS, BY GEOGRAPHICAL AND LINGUISTIC GROUPING OF ORIGINS, CANADA, 1921 AND 1931
(As indicated by the percentage of children born in Canada in 1931 and in the Registration Area in 1921)

Racial Origin Group	1921		1931	
	Males	Females	Males	Females
	p.c.	p.c.	p.c.	p.c.
North Western European.....	24.0	24.6	28.0	28.6
South, Eastern and Central European.....	5.2	2.5	6.8	5.4
Scandinavian.....	24.1	26.4	35.4	36.1
Germanic.....	22.8	23.8	25.3	26.3
Latin and Greek.....	13.5	1.5	17.8	6.7
Slavic.....	3.2	2.8	4.1	4.8

² See footnote 1, Table XLVI.

CORRELATION BETWEEN INTERMARRIAGE AND SELECTED
INDEPENDENT VARIABLES

Hitherto attention has been focussed on the *amount* of intermarriage which had taken place prior to the date of the last census (1931) and the *progress* of this method of assimilation during the preceding inter-censal decade. It was found that the several groups of origins varied greatly, both with regard to the amount of intermarriage with other races generally and with the British and French stocks in particular. An attempt will now be made to determine how far those differences are attributable to causes of a predominantly racial nature and how far they are associated with more or less extraneous circumstances, such as length of Canadian residence, the numerical strength of the origin group and so on. In the present section of the study *five* independent variables are related to general intermarriage data for individual origins. The first three variables are similar to those used in the 1921 correlation, *viz.*, length of residence, sex distribution and size of group. In addition, two other factors are introduced. The recent 1931 Census tabulations permitted the computation and inclusion of an index of segregation and a percentage-rural-urban distribution of adult males for individual origins. Of these five variables length of residence and size of the group are almost entirely non-racial in character; with the remaining three, racial elements enter in to a greater or less degree. Before proceeding with the correlation, therefore, it will be necessary to examine with some care the precise significance of each of the series used and the nature of its relation to the amount of intermarriage.

That such factors affect the number of exogamous marriages is readily seen. The mere fact of recent arrival may have precluded the possibility of intermarriage, and certain peoples which show small percentages intermarrying may not be averse to mixing with other stocks but may merely have lacked opportunity. Other things being equal, the longer a group has been resident in Canada or the United States the larger will tend to be the proportion who have married outside the group. Similarly, the greater the degree of geographical segregation, the smaller will be the expected amount of mixed marriages, and the greater the diffusion the larger the amount. The greater the surplus of males of marriageable age in a given group, the greater will be the proportion who will have to find partners in other stocks if they are to marry. Further, the larger the percentage a given group constitutes of the total population, the greater is the chance of that group being self-contained in respect to marriage. The mathematical probability of a German taking a German wife is greater if there are fifty German women in every one hundred women of the population than if there are only five or ten. Again urban life is as a rule much more cosmopolitan than is rural. The many social, educational, occupational, religious and other contacts associated with city life might normally be expected to promote intermarriage. The nature of the above relationships is more or less obvious. It now remains to comment on the specific statistical series employed.

Length of Residence.—The first problem was to secure a satisfactory index of length of residence. In Chapter III the percentages of Canadian and United States born in the several stocks were used in discussing this question. For rough comparisons they served fairly well, but while long residence is almost invariably the most important cause of a high percentage North American-born, it should be kept in mind that other factors are involved. First, birth rate; a stock with a high birth rate will show a higher percentage Canadian- and United States-born than one with a low birth rate, assuming that other things are equal in all respects. Further, a group of immigrants among whom the numbers of the sexes are nearly equal will show a higher percentage born in North America after a given period, than one with a large surplus of males. A surplus of unmarried males does not reproduce itself, while, when the numbers are approximately equal, the implication is that a larger percentage of the adult men and women are married and making additions to the numbers of their respective origins born on this continent. Finally, in cases where there has occurred a recent revival of immigration from abroad, and in comparatively great volume, the percentage Canadian- and United States-born may be reduced to an appreciably greater extent than is the average length of residence of married adults of the same origin. Where, on the other hand, immigration has been arrested for a few years, a moderately prolific stock may show an inordinately high proportion born on this continent within a comparatively short time. Nevertheless, it remains true generally that the larger the percentage of a particular origin North American-born, the longer will tend to be the average length of North American residence of married persons, as well as others in that racial category and in the

absence of a more precise method of measuring the duration of the North American domicile for the different stocks recourse must be had to the above index.

The reasons for the use of the percentage North American-born in preference to the percentage Canadian-born as an index of length of residence are two: first, a large percentage of certain origins, notably Scandinavian, immigrated to Canada from the United States; and second, because of the similarity of cultures in the two countries, residence in the United States is the virtual equivalent of residence in Canada in so far as its effects on intermarriage are concerned.

Sex Distribution.—Here the significant ratio is that between the number of males and females of marriageable age. The surplus of adult males per one hundred adult females was therefore computed for each of the origins for which data were available, and the resulting series was introduced into the correlations as the second independent variable. The sex distribution of a given origin group is partly a matter of accident or circumstance quite independent of race. Recency of immigration is a frequent cause of a large surplus of males. Sometimes, a large surplus is attributable to legal restrictions on immigration, as with the Chinese and Japanese, and there are many instances where the proportions of the sexes emigrating are determined by economic and other conditions in the homeland of an essentially non-racial character. On the other hand, sex distribution is probably also to some extent a matter of origin. As was pointed out in Chapter III, with certain peoples emigration to Canada includes very large proportions of unattached males while with others it is predominantly a family movement. However, that may be, marked differences do appear in the proportions of the sexes in the several stocks in Canada and these differences constitute a proximate cause of variations in the amounts of intermarriage. The mathematical chance of a man marrying a woman of the same origin is much less in a group with a large surplus of males than in one where the sexes are numerically equal. Conversely, the chance of a woman taking a husband of the same stock is greater if there is a large surplus of males from which to choose and smaller if the surplus is small or an actual shortage exists.*

The Size of the Group.—A third factor which is in no way hereditary and at the same time can be definitely measured, is the proportion that the adults of the several groups constitute of the total adult population. Other things being equal, the smaller the group the more easily it will be assimilated by marriage with the numerically dominant groups among which it is placed, and conversely, the larger the group the greater the difficulty. One might cite instances from Table 43 to illustrate the point. As in the case of length of residence and sex distribution, however, there are many instances where it is submerged by other influences.

Segregation.—The tendency to segregate is much more marked with some of the foreign stocks in Canada than with others. It is evident among rural as well as urban people. The mere reducing of the chances of meeting and mixing with other stocks is a real hindrance to intermarriage and when coupled with social and cultural characteristics which differ materially from those of the basic stocks of the country it may prove a barrier of first importance. How far the geographical concentration of the different stocks is the result of population traits and how far it is the consequence of the circumstances of settlement was discussed in Chapter VI in which will be found the index of segregation employed in this section of the study.

Rural and Urban Distribution.—As with segregation, rural-urban distribution is to some extent a matter of "origin" using the term, of course, in its broad sense. Certain groups, as we find them in Canada at least, are essentially urban and others are predominantly rural. The particular series made use of in the subsequent correlation is the percentage of adult males of each origin domiciled in urban centres in 1931.

Correlation.—When the amount of intermarriage is compared with any one of the five factors mentioned above, it is found that the others exercise a disturbing influence sometimes counteracting and sometimes accentuating the effect of the factor under consideration. The fact is that all five are operative at the same time. Now it is of prime importance to determine both their combined and several effects on intermarriage—their combined effect, because if they do not account for the actual proportions of intermarriage occurring, other influences must be at work. The separate influence of each is significant because it assists in explaining the present situation and also constitutes a basis for prediction as to the future. The method of multiple and partial correlation enables one to generalize on the basis of the experience of the stocks

*It will be shown below that in the case of males this element of chance is more than offset by other circumstances associated with sex distribution.

The regression equations were as follows:—

$$X_1 \text{ (males)} = .3552 X_2 - .0116 X_3 - 5.5261 X_4 - .0600 X_5 + .1872 X_6 + 29.3421$$

$$X_1 \text{ (females)} = .0138 X_2 - .0642 X_3 - 2.6044 X_4 - .0496 X_5 - .1092 X_6 + 57.0713$$

where X_1 = in the first correlation, the percentage of married *males* in a given stock who had intermarried; in the second, the percentage of married *females* in a given stock who had intermarried;

X_2 = the percentage of the stock North American-born;

X_3 = the surplus adult males per one hundred adult females;

X_4 = the percentage which the adults of each origin constitute of the total adult population of Canada;

X_5 = the index of segregation;

X_6 = the percentage of adult males residing in urban parts.

A glance at the equation for the males confirms our *a priori* reasoning as to the nature of the relationship between four of the independent variables and the amount of intermarriage. Other things being equal, an increase of 1 p.c. in the percentage North American-born *increases* the expected proportion of males intermarrying by 0.3552 p.c. and an addition of a similar amount to the proportion living in urban parts raises the anticipated proportion of exogamous marriages by 0.1872 p.c. Conversely, an addition of 1 p.c. to the proportion which the adults of any origin constitutes of the total adult population and an increase of one point in the index of segregation *reduces* the expected amount of cross-marriage by 5.5261 and 0.0600 p.c., respectively.

In the case of the males, sex distribution behaved contrary to anticipation. Were the surplus of males important in either the simple or multiple correlations the above fact would be significant. Such, however, was anything but the case. The weight of sex inequality in the simple correlation when compared with that of segregation, for example, was as 1 to 100 and in the multiple as 0.4 to 100. In view of the negligible magnitude of its association with intermarriage in either case, the fact that the simple association followed expectation in being positive in actual practice but negative when the influence of other related factors was taken out of it, is of little consequence. The change of sign could easily have been purely accidental. The really significant finding is the smallness of the influence of the magnitude of the surplus of males in accounting for differences in the proportions of males marrying outside the race. Some reasons for this lack of association will be suggested presently.

The equation for the females is subject to an analogous method of interpretation. The longer the North American residence, the *larger* is the expected amount of intermarriage. Conversely, the larger the surplus of adult males, the larger the size of the group, the greater the degree of segregation and the greater the proportion of males living in urban centres, the *smaller* is the amount of intermarriage.

Here also one of the variables behaves contrary to pre-conceived ideas on the subject. Other things being equal, the larger the proportion of males of a given race urban, the smaller is the proportion of females contracting exogamous marriages. This finding is in curious contrast to that for the males. The more of them in urban centres the larger is the number who marry out, presumably because of the more cosmopolitan character of urban life and the greater opportunity of meeting females of other origins in the ordinary course of business and social activities. In view of the drastic shortage of females in the majority of immigrant races this opportunity for diverse and frequent social contacts expresses itself in increased numbers of exogamous marriages. With the females on the other hand, the dominant effect seems to derive from a greater variety of choice as between eligible males of the same origin. The surplus males have to marry out if they marry at all. Not so with the females. For the females of the average foreign race city life *per se* appears to facilitate their finding a suitable mate of their own stock and thus avoiding marriage into an alien race. The net effect, however, is relatively small.

Reverting now to the equations themselves it is obvious that the chances of a change of one point or 1 p.c. are by no means equal in the case of all five variables. A more definite idea of their actual importance in explaining differences in the expected amounts of intermarriage for the different races may be obtained by substituting the standard deviations of X_2 , X_3 , X_4 , X_5 and X_6 in the regression equations. When this is done it is found that variations in the degree of segregation which actually existed in 1931, in the case of the *males* were on the average

over twice as significant in explaining differences in the amounts of intermarriage as any one of the other factors and in the case of the *females* were half again more important than all other factors combined. The relative significance attaching to each in the prediction may be stated more precisely by the use of weights:—

RELATIVE SIGNIFICANCE OF THE FIVE VARIABLES IN THE PREDICTIONS

Males		Females	
Variable	Weight	Variable	Weight
X ₁ (segregation).....	100	X ₁ (segregation).....	100
X ₂ (length of residence).....	43	X ₂ (surplus males).....	23
X ₃ (size of group).....	30	X ₃ (size of group).....	20
X ₄ (percentage urban).....	25	X ₄ (percentage urban).....	17
X ₅ (surplus males).....	3	X ₅ (length of residence).....	2

These figures are graphically presented in Figs. 33 and 35.

With the males, differences in the percentage North American-born (length of residence) ranked next to segregation in importance. The size of the group came third and percentage urban fourth. As was mentioned above, differences in sex distribution were of negligible importance in the prediction as in the correlation itself.

The same is not true in the prediction for the females. While segregation has even greater weight as a deterrent to intermarriage in the case of females (probably because it is more marked with them than with the more mobile males) sex distribution has slightly more importance than either the size of the group or the rural-urban distribution. The logical explanation would seem to be the larger the range of choice the more likely is the female to find a suitable mate of her own origin, the reasoning being similar to the suggested explanation of the negative association between female intermarriage and percentage urban discussed above.

Why is sex distribution so unimportant in the case of males? The answer in part seems to be in the high negative simple correlation ($r = -.65$) between length of residence and the size of the surplus of males. The surplus males seem for the most part to be the new arrivals. They comprise in the main the floating, single, immigrant population who as a rule are possessed of neither the means nor the will to marry and settle down. The fact that their number exceeds the number of females in the corresponding origin by 50 or 200 p.c. seems to make no material difference to the progress of intermarriage as far as they are concerned. It is geographical distribution and length of residence that count.

And this leads to another curious difference between males and females. Neither in the simple nor the multiple correlations nor in the prediction has length of residence any appreciable connection with the proportion of *females* marrying outside their race. Why should it have unless it is a case of marrying into the basic Anglo-Saxon or French stocks? With only a few exceptions females of alien stocks do not do that to any appreciable extent. The barriers are too great and besides there is no occasion for doing so. With an excess of males not only of their own but of allied origins, females of immigrant stocks are in great demand. For them the conditioning factor with exogamous as with endogamous marriages seems to be the opportunity of getting acquainted. Long North American residence appears to be of no particular advantage to the female in finding an acceptable husband of her own or alien stock, so long as it is not a question of intermarriage with the British.*

Conditions favourable to assimilation of females by intermarriage would appear to be first and foremost, the absence of bloc settlement either in urban or rural areas; second, the presence of alien stocks in numerically small minorities, and third, numerical equality of the sexes. Were the latter conditions realized, urban residence would probably be found as favourable to intermarriage by the females as it now is by the males, and the passage of time in due course would tend to take care of racial assimilation by intermarriage, in so far as it can be taken care of in the presence of existing religious barriers. Unfortunately, the basic prerequisites for speedy racial assimilation are far from being realized in Canada to-day, and are not likely to occur in the discernible future, so that in the case of the majority of immigrant stocks assimilation by intermarriage will continue to proceed very slowly. This statement applies with particular

*In the case of intermarriage with the British, length of North American residence is a determining factor second only to religion in importance. Presumably, the same would apply to a greater or less extent to intermarriage with the French.

force to intermarriage between alien stocks and the dominant Anglo-Saxon and French inhabitants of the Dominion (see the following sections).

By substituting in the above equations values for X_2 , X_3 , X_4 , X_5 and X_6 as given in Table 43 the expected value of X_1 was computed for the males and the females of each origin. The actual amount of intermarriage was then expressed as a percentage of the expected in each case and the results, arranged in rank, appear below. They are presented graphically in Fig. 34.

TABLE LI.—ACTUAL INTERMARRIAGE AS PERCENTAGE OF THE EXPECTED, BY RACIAL ORIGIN AND SEX, ARRANGED IN ORDER OF RANK, CANADA, 1931

Males			Females ¹		
Rank	Racial Origin	Actual Intermarriage as P.C. of Expected	Rank	Racial Origin	Actual Intermarriage as P.C. of Expected
1	Italian.....	230	1	Italian.....	300
2	Finnish.....	150	2	Finnish.....	159
3	Hebrew.....	150	3	Swedish.....	143
4	Swedish.....	149	4	Norwegian.....	133
5	Danish.....	130	5	Danish.....	118
6	Belgian.....	129	6	Dutch.....	110
7	Norwegian.....	128	7	Belgian.....	105
8	Dutch.....	100	8	Polish.....	93
9	German.....	97	9	German.....	91
10	Roumanian.....	94	10	Icelandic.....	89
11	Russian.....	85	11	Czech and Slovak.....	83
12	Icelandic.....	80	12	Roumanian.....	83
13	Polish.....	72	13	Indian.....	77
14	Czech and Slovak.....	70	14	Austrian.....	74
15	Ukrainian.....	69	15	Ukrainian.....	74
16	Austrian.....	63	16	Russian.....	57
17	Indian.....	56	17	Hungarian.....	57
18	Hungarian.....	45			

¹ Hebrews omitted. Their expectation was -1.50 p.c., the actual was 1.0 p.c. It was, therefore, impossible to express the actual as a percentage of the expected.

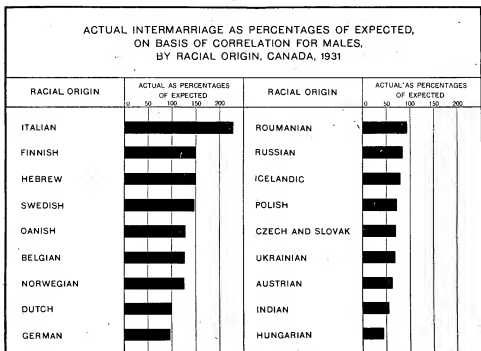


FIG. 34. After making allowance for differences in the five characteristics included in the correlation, the actual amount of intermarriage exceeded expectation in the case of all but one of the North Western European races while with the majority of the South, Eastern and Central Europeans it materially fell short of expectation.

The precise meaning of these figures may be illustrated by an example. On the basis of existing sex and rural-urban distribution, the size of the group in Canada, its geographical distribution and average length of residence, the expected percentage of intermarriage for the men of Swedish origin was 41 p.c.; the amount which had actually occurred was 61 p.c., a proportion greater than expectation by half. On the other hand, the expected percentage of intermarriage for the men of Hungarian origin was 22 p.c.; the actual only 10 p.c., or less than half the expected. The figures for the females may be interpreted in a precisely similar manner.

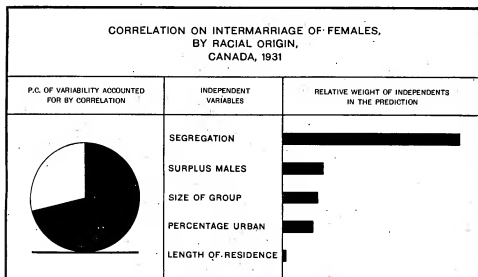


FIG. 35. With the females, the five independent variables accounted for 71 p.c. of the variability in the amounts of intermarriage as indicated by the percentage of children born between 1930 and 1932 in Canada. Here segregation has more weight than the four remaining variables combined. A large surplus of males of the same racial derivation, a large proportion urban and large numbers generally widen the range of choice and promote intermarriage. Other things being equal, length of North American residence is of little importance.

This table and the adjacent chart show why the coefficients of correlation were not higher than .83 and .85, respectively. For many of the peoples the actual amount of intermarriage was considerably in excess of the expected; for others the actual rate fell far short of expectation. Length of residence, sex distribution, numerical strength, the degree of segregation and rural-urban distribution combined, obviously by no means entirely explain the behaviour of the different stocks in respect of intermarriage. As was mentioned above, the size of the correlation coefficients indicates that their joint influence accounts for only about 70 p.c. of the variation in the amounts of intermarriage which characterizes the group as a whole. The performance of many of the stocks differs very considerably from what was anticipated. The question naturally arises as to why this should be so, and in seeking an answer one finds it necessary to pass from the realm of circumstances and characteristics capable of mathematical measurement and manipulation to causes, many of which are more intimately associated with hereditary and cultural traits and less capable of precise evaluation. Of course, it should be kept in mind that though length of residence and the size of the group are largely external to race, sex and rural-urban distribution are to some extent the product of racial preferences and the same is the case, probably to an even greater degree, with segregation which is the dominant factor in the equation. Taken as a group the influences so far considered are in some measure racial.

What then are the other causes in terms of which an explanation of the residual variations must be found? There are many types some racial, some non-racial. Only a few of the principal ones will be mentioned.

(1) *Physiological*.—This coupled with associated psychological implications, occurs first to the mind of the biologist when the term "stock" is mentioned. Indeed the connotation of the word is often confined to such characteristics. We have seen that between stocks of different

colour such barriers are of major importance. How important physical differences are in arresting intermarriage between the white stocks is a matter of opinion. They certainly exist, but there appears to be no method of isolating or measuring their influence.

(2) *Social and Cultural*.—One may include under this heading the general manner of life, social standards and ideals, customs, etc. For some stocks these are very similar to those obtaining in Canada and in such cases assimilation by intermarriage is comparatively easy. For others, differences of this sort raise almost insuperable barriers which can be lowered only by a long tedious process for the simple reason that intermarriage, the most potent agency for destroying them, tends to be precluded by their very existence.

(3) *Religious*.—There is no doubt that differences in religion are one of the most important obstacles to intermarriage between the several stocks. One is not here referring to denominational cleavages within the Protestant section of the Christian faith. As a matter of fact, a comparison of the religious affiliation of the couples marrying in 1931 with the religions of the population as a whole as shown in the census of that year indicates that within the Protestant Church denominational differences have very little influence on the choice of a husband or a wife as the case may be. It is not so, however, as between Jew and Gentile, Roman Catholic and Protestant or even Greek and Roman Catholic. What applies to the population as a whole might be expected to apply with at least equal force to the racial groups which compose it and the data in this chapter lend a good deal of support to this conclusion. The earlier sections on the progress of assimilation by intermarriage with the Anglo-Saxon and French and the ensuing discussion of relative assimilability with the British, show that intermarriage has progressed much faster and further between peoples of similar religions and *vice versa*. The tendency for Central Europeans when marrying out to choose a mate from a stock of allied geographical origin has undoubtedly a religious as well as cultural explanation. The preference of Scandinavians and Germans for the Anglo-Saxons reflects among other things the comparative absence of effective religious barriers. Religion, of course, with one or two possible exceptions is not strictly a matter of race, but it so happens that most origin groups in Canada are predominantly of one or other of the major religious faiths and this circumstance can not but have a considerable influence on the direction and extent of intermarriage with other origin groups in the Dominion. Indeed, the evidence is that it has a very important effect.*

(4) *Occupational*.—While occupation is not properly a characteristic of particular stocks, Canadian experience provides many illustrations of groups following certain occupations almost exclusively and doing grades of work which the dominant stocks of Canada either avoid or are forced to relinquish. Occupational segregation is invariably a hindrance to intermarriage. Like data on religion, occupational statistics can not readily be introduced into a general correlation of the present type but a careful perusal of the tables in Chapter XII reveals a number of instances where occupational distribution seems to be intimately associated, if not with the extent, at least with the direction of intermarriage.

Returning now to the table showing the extent to which the various stocks under review had measured up to expectation in respect to intermarriage let us first note those at the top and those at the bottom of the list, and then see what light is thrown on the subject by such of the differences as are capable of statistical treatment.

Consider first the figures for the males. In eight cases out of eighteen the amount of intermarriage up to 1931 exceeded expectation. Six out of the eight were Northern Europeans, the two exceptions being the Italians and the Hebrews. Of the ten origins showing percentages less than 100, seven were South, Eastern or Central Europeans, the others being the Germans, the Icelanders, and the North American Indians for whom intermarriage is subject to special impediments in the form of a colour barrier and segregation in remote reserves. The broad statement, therefore, is justified that males of North Western European origin—or at least such as are now resident in Canada—are on the average distinctly more amenable to assimilation by marriage than are the South, Eastern and Central Europeans as a whole and that after due allowance is made for length of residence, sex and rural-urban distribution, numerical strength and segregation.

The same conclusion follows from an examination of the figures for the females. Of the seven origins where the actual exceeds the expected all but the Italian are Northern European peoples. Of the ten where the actual is less than the expected all but three are South, Eastern

*That religion is the dominant influence in intermarriage with the British is demonstrated in the following section.

and Central European. The exceptions are the same as in the case of the males—the Germans, Icelanders and North American Indians.

When the several stocks are arranged in linguistic groups some interesting facts appear.

TABLE LII.—ACTUAL INTERMARRIAGE AS PERCENTAGE OF THE EXPECTED, BY LINGUISTIC GROUPING OF RACIAL ORIGINS AND SEX, CANADA, 1931

Racial Origin	Actual Intermarriage as P.C. of Expected		Racial Origin	Actual Intermarriage as P.C. of Expected	
	Males	Females		Males	Females
Scandinavian—			Latin and Greek—		
Swedish.....	149	143	Italian.....	230	300
Danish.....	130	118	Roumanian.....	94	83
Norwegian.....	128	133	Slavic—		
Icelandic.....	80	80	Russian.....	85	57
Germanic—			Polish.....	72	93
Belgian.....	129	105	Czech and Slovak.....	70	83
Dutch.....	100	110	Ukrainian.....	69	74
German.....	97	91	Austrian.....	63	74
			Hungarian.....	45	57

Two points of importance are brought out by the table: (1) the low average for the Slavic races as compared with that for the Scandinavian and Germanic peoples or even with that for the Latins and Greeks and (2) the exceedingly high figure for the Italians. The first circumstance seems to provide conclusive evidence of the existence of differences as between the *groups of stocks* in regard to assimilability by intermarriage with other races in Canada. The second requires some explaining.

An examination of the work sheets for the correlation shows that the expected percentage of intermarriage for the Italians was greatly affected by an exceedingly high index of segregation. Reference to Chapter V shows that, except for the Greeks, the Italians are far more highly concentrated in the *large cities* than any other European race. Because of the more cosmopolitan character of life in such centres, segregation of this sort is not likely to be nearly so unfavourable to intermarriage as is rural segregation or segregation in smaller urban centres. Consequently, with this origin, the progress of intermarriage was not so adversely affected as might be expected from the recorded degree of concentration. Conversely, the excessive concentration in the larger, as opposed to the smaller urban centres would tend in practice to result in a higher proportion of exogamous marriages than was anticipated from a simple weighting of the crude rural-urban distribution on the basis of the experience of the average race as indicated by the equation. The abnormally high degree of concentration in metropolitan areas, therefore, tended to materially reduce the expected amount of intermarriage below what it should have been had it been possible to allow for all of the peculiarities of the geographical distribution of the stock or what is the same thing, it tended to increase the actual above the expected as computed from the equation. To these influences must be added the facts that over 25 p.c. of the Italian race resident in Canada were domiciled in the Roman Catholic province of Quebec, where there existed no religious barriers to intermarriage with the dominant Canadian population; and that the proportion of Italian males engaged in common labour was nearly three times larger than that for the population of Canada as a whole. In most urban centres the common labouring group is unusually cosmopolitan in character so that Italian common labourers would be forced to associate with other origins to a greater extent than were they in most other occupational classifications. Such are probably the more important explanations for the large proportions by which the actual exceed the normal expectation in this particular instance.

The case of the Italians leads to a belated consideration of the extent to which eccentricities of behaviour in regard to the five variables included in the correlation itself accounted for the differing amounts by which the actual exceeded the expected. As explained elsewhere a large deviation from expectation may be the result of the inordinate influence of extraneous causes on the actual or the effect of unusual behaviour of one or more of the independent variables on the expected. In the case of the present correlation the overwhelmingly important factor in both equations is segregation. A high index of segregation lowers the expected amount of intermarriage and thus makes for an excess of actual over expected.

Conversely, a low index of segregation tends to raise the expected above the actual. When one examines the data for the various races with this relationship in mind, one finds that speaking generally, the expected amounts of intermarriage for the Northern Europeans (the Finnish excepted) were unduly raised by indices of segregation much below average, yet despite this fact, they were the very racial groups for which the actual exceeded the expected. With the South, Eastern and Central Europeans as a group, on the other hand, indices of segregation were on an appreciably higher level so that in so far as their expectations were distorted by this circumstance they were distorted downward. Yet it was this group of races where the actual generally fell short of the expected and by the greatest amounts. It follows, therefore, that the general case for differences in assimilability as outlined above is under- rather than over-stated.

A detailed explanation of the spread between the expected and the actual amounts of intermarriage for the other individual races is left to the interested reader. The general method of approach and the more important factors to be taken into account have been set forth in the preceding paragraphs.* The object of this section was to demonstrate the nature and in so far as possible to measure the relative importance of the more significant influences affecting the progress of assimilation by intermarriage. That task having been accomplished with a greater or less degree of success, attention is now turned to a study of relative assimilability with the basic Anglo-Saxon elements of the population.

Relative Assimilability with the British.—The previous section dealt with the extent to which the "origin" groups differ in respect to ease of assimilation by marriage with other stocks in general. This section has to do with their assimilability with the British stocks in particular. In the discussion of the general question of assimilation, it was necessary to eliminate more or less extraneous influences before the intrinsic differences could be isolated and studied. It is possible, however, to secure in a very simple manner what might be termed an index of comparative assimilability with a single stock. This may be best illustrated by an example. According to the figures for 1931, 77 p.c. of the Dutch males who married outside their group married British wives, but only 10 p.c. of the Ukrainian men who intermarried chose mates of British origin.

It is necessary at this point to raise the question as to what proportion of exogamous marriages would be contracted with the British on the basis of mere chance. In 1931 approximately 55 p.c. of the population of Canada 21 years of age and over was of British origin. Consequently, assuming no discrimination against the British as compared with the other stocks and assuming no discrimination on the part of the British against any foreign stock, at least 55 p.c. of those of each foreign origin who married outside their group might be expected to have taken mates of British stock. Now, when a group shows so small a percentage as 10 p.c. in the face of an expected rate of at least 50 p.c., the inference is that one or both of two things interfered. Either hereditary or cultural barriers stood in the way or there was a lack of opportunity of meeting the British because of segregation. It would seem, then, that the percentages of the several groups marrying out who married into the British stocks may be regarded as a very fair indication of relative assimilability with the British, under existing conditions.

It should be kept clearly in mind that these percentages do not constitute an absolute measure of assimilability. To secure an absolute index one would have to take into consideration the proportion of the total married who married British and follow a procedure similar to that in the last subsection.† Perhaps this may be made clearer as follows: total intermarriage may be either large or small without affecting the percentage of those crossing the lines of their own stock who marry into Anglo-Saxon stock. The index here considered compares the barriers to marriage with the British with those to marriage with all other stocks, including among such barriers those arising out of cultural background, religion and territorial and occupational distribution of the population as at the date of the last census.

As in the earlier sections of this chapter it is not proposed to make a detailed analysis similar to that published elsewhere on the basis of 1921 figures.‡ The present discussion is confined to

*The case of the Finnish is very similar to that of the Italians—an excessively high degree of segregation which unduly lowered the expectation and created an inordinate excess of actual over expected. That of the Hebrews is not significant because of the negligible proportions intermarrying in any case. The low figure for the Indians despite a high degree of segregation reflects the colour and cultural barrier to marriage with Whites.

†This is done later on in the present section.

‡Origin, Birthplace, Nationality and Language of the Canadian People, pp. 135 and 137.

Table LIII which summarizes the data for both census years by geographical and linguistic groups.* Of the North Western Europeans who had married outside their ethnic group by 1931, 64.8 p.c. of the men and 68.6 p.c. of the women had married Anglo-Saxons as compared with only 24.4 p.c. for both the men and women of South, Eastern and Central European extraction. The percentages for the former group were, therefore, between two and one-half and three times greater than those for the latter.

As a class, the Germanic peoples lead in the proportions of mixed marriages contracted with Anglo-Saxons, the Scandinavians rank second, the Latins and Greeks third† and the Slavs last. The spread in the proportions continues to be large—from 17.1 p.c. (Slavic) to 68.1 p.c. (Germanic) for the men and from 20.0 p.c. (Slavic) to 71.0 p.c. (Germanic) for the women—though not quite so marked as in 1921. It is illuminating to compare the tabulated percentages with the 55 p.c. mentioned above—the proportion of intermarriage with the British stocks which might be expected on the basis of mathematical chance. As compared with the percentages for the Germanic and Scandinavian peoples, the figures for the Slavs and Latins and Greeks may be somewhat lower than they should be by virtue of a differential lowering of the birth rate through marriage with the British and a consequent tendency for the proportion of married couples recorded as having children in 1931 to under-state the amount of intermarriage which had actually taken place between these high-fertility stocks and Anglo-Saxons. Even admitting this, the disparity is so marked as to leave no doubt as to either the reality or the importance of differences in assimilability with the numerically dominant stock in the Dominion under existing conditions of geographical and occupational distribution.

The 1931 figures confirm the suggestion that women generally show a greater relative preference for marriage with Anglo-Saxons than do men of the same origin. This is true for all four linguistic groups and for seventeen out of the twenty individual origins used in compiling Table LIII. The inclusion of the Finns, one of the three exceptions, in the total for the South, Eastern and Central Europeans is the reason for the figures for that geographical group failing to conform to type. The different behaviour of the sexes with respect to intermarriage with Anglo-Saxons may be attributable partly to the relatively larger proportion of females in urban occupations, possibly in some degree to the generally higher educational status of females, and partially to a true sex difference.

For all groups the percentages of exogamous marriages contracted by women with persons of British extraction were higher in 1931 than in 1921, and the same obtained with the men of both Scandinavian and Slavic extraction, indicating improved assimilability with the basic Anglo-Saxon stock of the country. The absence of any increase in the figure for the German males is probably associated with the mis-statement of origin in 1921 and the subsequent transfer of Germans from the Austrian and Russian to the German origin classification. The decline in the percentage for the Latin and Greek males was most marked in the case of the Italians who dominate the group numerically. The explanation is not readily apparent. It is interesting to note, however, that unlike the Italians and the Greeks, the Roumanian males behaved more in accordance with expectation. By 1931, marriages between males of that origin and Anglo-Saxon women constituted a larger proportion of all mixed marriages than in 1921.

*The reader is cautioned against placing too much importance on any comparison of the 1921 and 1931 figures for individual origins. The different areas covered by the vital statistics records for the two years, coupled with the fact that owing to the limited size of the sample the absolute figures for some origins are too small to be considered representative, results in the erratic behaviour of the percentages for certain of the numerically smaller stocks. The latter objection does not apply to the totals for the geographical and linguistic groups on which attention is here focused. The figures for the more rural Roumanians are very much lower than those for either the men or women of Italian or Greek origin.

TABLE LIII.—PERCENTAGES OF ALL MIXED MARRIAGES OF PERSONS OF CONTINENTAL EUROPEAN RACIAL ORIGINS CONTRACTED WITH MEN AND WOMEN OF BRITISH STOCKS, BY GEOGRAPHICAL AND LINGUISTIC GROUPING OF ORIGINS† AND SEX, CANADA, 1921 AND 1931
(As indicated by the parentage of children born in Canada in 1931 and in the Registration Area in 1921)

Racial Origin Group	1921		1931	
	Males	Females	Males	Females
	p.c.	p.c.	p.c.	p.c.
North Western European.....	65.6	65.2	64.8	68.6
South, Eastern and Central European.....	26.4	16.9	24.4	24.4
Scandinavian.....	52.1	56.6	59.6	64.6
Germanic.....	70.0	60.6	68.1	71.0
Latin and Greek.....	47.4	17.6	41.4	44.2
Slavic.....	14.4	15.3	17.1	20.0

† See footnote 1, Table XLVI.

Factors Making for Intermarriage with the British.—It is important to know with some degree of precision just what conditions are favourable and what are unfavourable to intermarriage with the basic stocks of the country. Earlier in this chapter mention was made of the fact that barriers to intermarriage as between immigrant stocks were probably on the whole somewhat lower and certainly had different relative importance in the case of intermarriage with the Anglo-Saxons. Recourse was had, therefore, to the method of partial and multiple correlation in an endeavour to discover what additional light might be thrown on the question of intermarriage with the British.

Two correlations were worked out for a sample of twenty races. The first related the percentage of married males married to Anglo-Saxons (as derived from the parentage of children born between 1930 and 1932) to sex, length of North American residence and the size of the group. The second related the same independents to the proportion of married females married to Anglo-Saxons. The resulting coefficients of correlation were $R = .68$ for the males and $R = .64$ for the females and the regression equations were as follows:—

$$X_1 \text{ (males)} = .0661 X_2 + .7582 X_3 - 4.8165 X_4 - 25.6910 \quad (1)$$

$$X_1 \text{ (females)} = .0161 X_2 + .6167 X_3 - 3.1698 X_4 - 17.1742 \quad (1)$$

where X_1 = in the first equation, the percentage of married males married to Anglo-Saxons;

X_1 = in the second equation, the percentage of married females married to Anglo-Saxons;

X_2 = surplus adult males per one hundred adult females;

X_3 = the percentage of the stock North American-born;

X_4 = the percentage which the adults of each origin constitute of the total adult population of Canada.

It is seen that with both sexes the larger the surplus of males, the longer the North American residence and the smaller the size of the group the greater the amount of intermarriage with the basic British stock. The relative importance of these variables in the prediction is as follows:—

RELATIVE SIGNIFICANCE OF THE THREE VARIABLES IN THE PREDICTIONS

Males		Females	
Variable	Weight	Variable	Weight
X_2 (length of residence).....	100	X_2 (length of residence).....	100
X_3 (surplus males).....	42	X_4 (size of group).....	31
X_4 (size of group).....	39	X_3 (surplus males).....	12

Data for the females are shown in Fig. 36.

Length of residence is the determining factor in both equations having a weight well in excess of the other two variables combined. With the females its relative importance is even greater than with the males, its weight being more than twice that of the other two together. In the first correlation the magnitude of the male surplus ranks second in importance and the size of the group ranks a close third. In the second correlation, the size of the group though ranking second has somewhat less influence than in the first and sex distribution is reduced to a place of comparative insignificance.

The behaviour of the sex distribution in these as compared with the previous two correlations requires some explanatory comment. In the regression on *female* intermarriage with all other races, sex seemed to have some significance, a large surplus of males apparently retarding intermarriage by increasing the chance of finding a suitable mate within the origin group. In the case of intermarriage with the British it seems to have little influence and had an index of segregation been introduced into the correlation its weight would have been even less than that indicated by the adjacent tabulation. In view of the low degree of association, the sign is of little or no significance. The point is that length of residence is the important factor of the three here considered. Anglo-Saxon males do not marry newly-arrived—even first generation—immigrant females of alien stocks. The surplus of males where it exists is a surplus of new arrivals and the magnitude of that surplus has very little relation to the marriage of females of alien extraction to Anglo-Saxon males.

With the *males of foreign origins* the extent of the surplus seems to have more importance in the matter of marriage with Anglo-Saxon females. This difference, however, is probably more apparent than real. A very definite association was found to exist between the magnitude of the surplus of males and the index of segregation and had the latter index been included in the present equation (as it was in the former) sex distribution almost certainly would have had materially less weight in the partial.

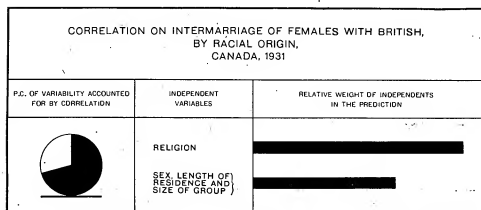


FIG. 35. Religion and length of North American residence are the determining factors in intermarriage, or the absence of it, with the Anglo-Saxons. What is true of the females applies also to the males. The four independents listed above accounted for approximately the same amount of the variability in the case of both sexes.

In view of the moderate size of the coefficients of correlation under discussion, an attempt was made to raise them by introducing other independent variables. To this end a crude index of religious assimilability with the Anglo-Saxon was constructed. The religious distribution of each race was examined and persons giving religions which did not involve insuperable barriers to marriage with the dominant Anglo-Saxon religions were expressed as a percentage of the total. This series and expected rates derived from equations 1 above were correlated with the proportions married to Anglo-Saxons. In the case of the males the multiple coefficient was raised from $R = .68$ to $R = .82$ and with the females from $R = .64$ to $R = .84$. According to accepted theory the four independents combined accounted for 68 and 71 p.c. of the differences* in the proportions of males and females of the several origins who had married into one or other of the British stocks. That such high correlations were secured without the use of the index of segregation at first glance might appear surprising. The fact of the matter seems to be that the influence of segregation or at least a portion of it gets into the correlation through its association with sex and the proportion North American-born and probably also with the index of religions. Further reference will be made to this point later.

The second set of regression equations were:—

$$X_1 \text{ (males)} = .6845 X_2 + .1650 X_3 - 1.8253 \quad (2)$$

$$X_1 \text{ (females)} = .6280 X_2 + .1971 X_3 - 2.9538 \quad (2)$$

where X_1 = the respective proportions of married persons married to Anglo-Saxons:

X_2 = the respective predictions based on equations 1:

X_5 = index of religious affinity with the Anglo-Saxons.

Both independents are positively related to intermarriage.

RELATIVE SIGNIFICANCE OF THE TWO VARIABLES IN THE PREDICTIONS

Males		Females	
Variable	Weight	Variable	Weight
X ₁ (religion).....	100	X ₁ (religion).....	100
X ₂ (prediction on the basis of sex, length of residence and size of the group).....	92	X ₂ (prediction on the basis of sex, length of residence and size of the group).....	68

*Or more accurately of the squares of the differences, i.e., the variability.

The above figures simply mean that religion was materially more important in explaining the fluctuations which actually occurred in the percentages of married persons in the different races marrying Anglo-Saxons than the three other factors combined. Indeed, it is almost certainly the most important single factor in intermarriage with the British. When the expected values are computed and the index of segregation is thrown into the correlation, the coefficient for the males is raised only from .82 to .85 which demonstrates not only that the influence of segregation to a large extent has already been taken into account through its association with the other variables but that it is not a major factor outside the equation.

The fact that in the equation religion has relatively more weight in the case of females of alien extraction marrying with Anglo-Saxon males than in the case of males of alien extraction marrying with Anglo-Saxon females may or may not have any real significance. The really important finding is its dominant influence on intermarriage. Religion and length of North American residence seem to be the determining factors in intermarriage with the British.

Of course, not all influences are included in the correlation as will be seen from the extent of deviations of the actual from the expected.

TABLE LIV.—ACTUAL INTERMARRIAGE WITH ANGLO-SAXONS AS PERCENTAGE OF THE EXPECTED ON THE BASIS OF PREDICTION EQUATION 2, BY RACIAL ORIGIN AND SEX, ARRANGED IN ORDER OF RANK, CANADA, 1931

Males			Females ¹		
Rank	Racial Origin	Actual Intermarriage as P.C. of Expected	Rank	Racial Origin	Actual Intermarriage as P.C. of Expected
1	Hebrew.....	900	1	Belgian.....	304
2	Belgian.....	298	2	Czech and Slovak.....	191
3	Bulgarian.....	277	3	Bulgarian.....	180
4	German.....	177	4	German.....	180
5	Danish.....	147	5	Swedish.....	135
6	Swedish.....	125	6	Danish.....	131
7	Dutch.....	109	7	Dutch.....	116
8	Norwegian.....	100	8	Hungarian.....	113
9	Italian.....	98	9	Norwegian.....	107
10	Greek.....	88	10	Polish.....	98
11	Icelandic.....	82	11	Icelandic.....	90
12	Czech and Slovak.....	73	12	Finnish.....	69
13	Polish.....	54	13	Italian.....	64
14	Yugoslavic.....	52	14	Austrian.....	58
15	Hungarian.....	51	15	Russian.....	49
16	Roumanian.....	49	16	Hebrew.....	44
17	Austrian.....	46	17	Roumanian.....	35
18	Finnish.....	44	18	Ukrainian.....	18
19	Russian.....	30	19	Greek.....	6
20	Ukrainian.....	12			

¹ Expectation for Yugoslavic females was —.9 p.c.; actual was 2.8 p.c. To express the actual in terms of a negative expectation would be meaningless.

Because of the much smaller absolute numbers marrying Anglo-Saxons, the position of any individual race in the above table is much less significant than in the preceding correlations. This is especially so when the numerical strength of a given origin in Canada is known to be small. Nevertheless, the conclusions are substantially the same as in the previous findings with regard to exogamous marriages generally. The truth of this statement is seen at a glance when one considers the averages for the geographical and linguistic groups.

TABLE LV.—ACTUAL INTERMARRIAGE WITH ANGLO-SAXONS AS PERCENTAGE OF THE EXPECTED, BY GEOGRAPHICAL AND LINGUISTIC GROUPING OF RACIAL ORIGINS AND SEX, CANADA, 1931

Racial Origin Group	Actual Intermarriage with Anglo-Saxons as P.C. of Expected	
	Males	Females
North Western European.....	150	152
South, Eastern and Central European.....	74 ¹	80 ²
Germanic.....	195	200
Scandinavian.....	114	116
Slavic.....	70 ¹	104 ²

¹ Including the excessively high and unreliable figure for the Bulgarians.² Including the excessively high and unreliable figures for the Czechs and Slovaks, Bulgarians and Hungarians.

Further comment is scarcely necessary. The results amply confirm all that has been said regarding the relative assimilability of the different stocks with the British. It is not a matter of accident that the averages for the North Western European races exceed expectation by 50 and 52 p.c. while the averages for the South, Eastern and Central European fall short of expectation by 20 and 26 p.c., and that after due allowance is made for the presence or absence of religious barriers, length of North American residence, sex and the numerical size of the groups. By grouping the races one obviates all question of the adequacy of the sample and eliminates individual eccentricities in the prediction thus assuring an adequate statistical basis for the conclusions.

Of course, it may be that the figures somewhat over-emphasize the differences for reasons discussed earlier in the chapter. Lower fertility rates on the part of persons of high-fertility stocks married to Anglo-Saxons, would decrease the number of the progeny of such mixed marriages appearing in the birth statistics owing to decreased births, thus producing an understatement of the number of such marriages. The opinion has been expressed that the error would not be sufficient to seriously affect the results. That opinion is confirmed by the present findings on the predominant importance of religious barriers to intermarriage. In the light of these findings it seems safe to conclude that a good proportion of mixed marriages between high-fertility races and Anglo-Saxons were with those sections of the Anglo-Saxon population whose religious tenets precluded any drastic drop in fertility. It is also reasonable to suppose that such marriages as a rule would be between persons in the same economic environment and of substantially the same economic status. The importance of the association between economic circumstances and fertility is clearly demonstrated in Chapter XIII. The tendency, therefore, would seem to be for high-fertility alien stocks to marry into the high-fertility sections of the British origins. This is not to say that some slight drop in fertility may not occur; the contention merely is that any likely drop on this account would not affect the general conclusions of the present sections. Besides, to explain away the indicated differences in assimilability on the basis of changes in fertility, one would have to accept and demonstrate the converse thesis, viz., that the fertility of mixed marriages between Anglo-Saxons and Northern Europeans was higher than that of the Northern European peoples themselves. The fact that their rates are appreciably higher than the British would add materially to the difficulty of demonstrating such a thesis. It seems to the writer that the only alternative avenue of escape from the present findings would be by showing that only the low-fertility sections of the high-fertility races and only the high-fertility sections of the low-fertility races marry Anglo-Saxons. Such an undertaking would immediately involve one not only in difficulties of logic but in conflict with facts amply substantiated in this monograph and other studies on fertility.

Detailed study of the spread between expectation and the actual performance of the individual races is left to the reader who may be interested. The procedure has been exemplified in the preceding section. To some extent the extremes may be explained in terms of eccentric behaviour of one or more of the variables within the correlation. The necessary figures for investigating this possibility appear in Table 44. When distortion in individual expected values is inadequate to account for the place of a given origin in the list, the unrepresentative character of the basic data may. Failing this, one must fall back on extraneous causes such as those listed earlier in the chapter.

The Extent to Which Continental European Stocks Have Married within Their Own Geographical and Linguistic Groups.—For those of European origin who have not married to a great extent either into the French or British stocks in Canada, it is of interest to discover into what stocks they do marry when they intermarry with other peoples. The following table presents a summary for the North Western and South, Eastern and Central European groups.

TABLE LVI.—PERCENTAGES OF MARRIED MEN AND WOMEN OF CONTINENTAL EUROPEAN STOCKS WHO HAD CONTRACTED MIXED MARRIAGES, AND PERCENTAGES OF THESE CONTRACTED WITH PEOPLES FROM THE SAME PART OF EUROPE, BY BROAD GEOGRAPHICAL GROUPING OF RACIAL ORIGINS, CANADA, 1921 AND 1931

(As indicated by the parentage of children born in Canada in 1931 and in the Registration Area in 1921)

Racial Origin Group	(1) P.C. of Total Married outside Their Own Stock		(2) P.C. of Col. 1 Married into Stocks of Same Geographical Group	
	1921	1931	1921	1931
MALES				
North Western European ¹	33.3	37.8	16.9	16.5
South, Eastern and Central European.....	16.2	18.4	39.8	49.0
FEMALES				
North Western European ¹	34.3	37.6	14.2	16.6
South, Eastern and Central European.....	13.5	18.0	52.2	50.2

¹ British and French not included.

With the North Western European males, nearly 38 p.c. had contracted mixed marriages in 1931 and only 16.5 p.c. of such marriages had been contracted with races from an adjacent section of Europe—a proportion almost identical with that in 1921. In striking contrast, less than 18.5 p.c. of the South, Eastern and Central Europeans as a group had married outside their respective races and of this smaller proportion nearly 50 p.c. had married persons whose original racial domicile had been in the same part of the continent. The situation with respect to intermarriage with persons of allied geographical origins remains substantially the same as in 1921 except for an apparent increase in this tendency among the males of South, Eastern and Central European stocks generally. It is a matter of some significance that of the persons of South, Eastern and Central European extraction who had married out by 1931, two had married into allied stocks for every one that had married into Anglo-Saxon, while with the North Western Europeans, four married into Anglo-Saxon for every one who had married into geographically allied origins. (Compare Tables LIII and LVI.)

So much for the geographical groups as a whole. The behaviour of many of the individual origins is quite different from that of the composite totals.* This may be shown by means of the linguistic sub-classification which together with certain related data is presented in summary form in Table LVII.

*In this connection the Finnish should be especially mentioned because they are not included in the linguistic group discussed below. When marrying out, they resemble the North Western Europeans and especially the Scandinavians much more closely than the South, Eastern and Central Europeans with whom they are grouped, in that in choosing mates among other racial origins their dominant preference is for Anglo-Saxons (and French) and their second choice is for other North Western Europeans. Comparatively small percentages have married either Slave or Latins and Greeks. The explanation is partly one of religion. The Finns are predominately Lutheran.

When marrying out, the Scandinavians show a much more marked preference for persons of North Western European extraction than do the Germanic peoples*; and the Slavs show a greater preference for South, Eastern and Central Europeans than do the Latins and Greeks as a group.† As was suggested in the previous section, these preferences are partly a matter of geographical distribution in Canada (and to that extent not true preferences) and partly a matter of culture and other characteristics associated with race. Religion is doubtless a major factor.

This concludes the analysis of the data on intermarriage, but there is one further point which should be mentioned. Little has been said of the proportions of those of British and French origin who have intermarried. They are the numerically dominant stocks in Canada. The extent of their intermarriage with those of other origins is limited by their overwhelming numbers. But in addition to that, aversion to intermarriage with certain stocks would also be an important factor in keeping the percentage low. The British and French themselves may block the assimilation by marriage of certain peoples and sometimes the onus of preventing intermarriage may rest primarily on the native Canadian stock. It is a matter of indifference, however, whether foreign stocks fail to marry with the British and French because of aversion on their own part or on the part of the British and French, or indeed for any other reason whatever except length of residence. The result is the same so far as the Canadian population structure is concerned. Such stocks are difficult of assimilation by marriage, and the present analysis suggests that there are still many in that class.

*Their relative preferences for British and French are shown in Cols. 2 and 3. Marriages with Anglo-Saxons and French are not included in Col. 1.

†The Roumanians who are more rural resemble the Slavs in their proportion of exogamous marriages contracted with persons of South, Eastern and Central European origin. The Italians (and Greeks) who are predominately urban are quite dissimilar in this regard. Scarcely any Italians marry Slavs.

TABLE LVII.—PERCENTAGES OF MARRIED MEN AND WOMEN OF CONTINENTAL EUROPEAN STOCKS WHO HAD CONTRACTED MIXED MARRIAGES, AND PERCENTAGES OF SUCH MARRIAGES CONTRACTED WITH (1) PEOPLE OF THE SAME LINGUISTIC GROUP, (2) ANGLO-SAXONS, (3) FRENCH AND (4) OTHERS, CANADA, 1931
(As indicated by the parentage of children born in Canada in 1931)

Racial Origin Group	Mixed Marriages as P.C. of Total Marriages	P.C. of Mixed Marriages with			
		(1) People of Allied Geographical Origin ¹	(2) Anglo-Saxons	(3) French	(4) Others
MALES					
Scandinavian.....	54.2	27.6	59.6	5.8	7.5
Germanic.....	32.0	10.4	68.1	10.8	10.7
Latin and Greek.....	25.9	21.3	41.4	27.5	9.6
Slavic.....	17.6	61.3	17.1	6.1	15.7
FEMALES					
Scandinavian.....	52.1	28.1	64.6	4.6	3.2
Germanic.....	32.9	11.2	71.0	8.9	8.9
Latin and Greek.....	11.8	31.6	44.2	13.0	11.4
Slavic.....	19.4	57.0	20.0	4.6	18.4

* As with Tables LIII and LVI, in so far as the figures in Table LVII are used as a basis for deducing tendencies or preferences, attention should be confined to the relative magnitude of the percentages in the several columns. No allowance has been made for differences in the total amount of intermarriage characterizing the racial groups included under the headings of Cols. 1-4. The horizontal reading of a given row merely reveals the percentage distribution of such exogamous marriages as have occurred.

* The percentages in this column for the Scandinavian and Germanic groups include intermarriages with persons of all North Western European origins; those for the Latin and Greek and Slavic groups include intermarriages with all South, Eastern and Central Europeans. French and British not included among North Western Europeans.

CHAPTER VIII

THE NATURALIZATION OF IMMIGRANT PEOPLES

The Proportion of Foreign Born Naturalized in Canada in 1931.—Naturalization does not mean "Canadianization". It merely signifies the intention of the immigrant to make a more or less permanent home in Canada and his assumption of the duty and privilege of participation in determining the political destiny of the country. The motives for taking out Canadian citizenship are varied and mixed. With a few the attainment of full equality of political status may carry great weight; with many, especially among the post-War immigrants, the desire to throw off onerous military and other obligations associated with an old national allegiance may constitute an important urge; but with most the desire to rid themselves of the material handicaps of alien status is doubtless the dominant consideration. Whether the influence of the newly naturalized immigrant will be beneficial, whether he will use the franchise wisely, is determined by factors other than the simple act of swearing allegiance to the adopted country and of receiving thereupon the full rights and responsibilities of citizenship. Indeed, it is quite possible for naturalization, when carried out prematurely, to be an actual menace to Canada's democratic ideals as well as to her political and social institutions.

However, the mere fact that an immigrant wishes to become a citizen is an assurance of his permanent interest in the country and may normally be taken as an indication that the assimilative process has proceeded to a moderate extent at least. The fact of naturalization is indicative of an attitude towards the country very different from that of the immigrant who shows no desire to take out naturalization papers. Other things being equal, therefore, immigrants from those countries and of those stocks which are readily naturalized are to be preferred as settlers to those among whom naturalization is unduly delayed, or among whom naturalization is the exception rather than the rule.

This chapter analyses the extent to which naturalization has progressed among the different types of immigrants, examines the causes of the differences and compares the various nationalities as to the speed with which naturalization has taken place.* The study, of course, includes only foreign born; those born in Great Britain or in other dominions or dependencies of the Empire are not required to "take out papers".

It might be well before proceeding with the analysis to mention a few of the general provisions of the Canadian naturalization laws which should be kept in mind in reading this chapter.† First, if the head of the family is naturalized, the children under 21 years of age automatically become Canadian citizens. Second, if the husband is naturalized, the wife is automatically a citizen. Third, if the head of the family immigrates into Canada unaccompanied and afterwards becomes naturalized, the wife and dependents under 21 become naturalized on arrival in Canada. Fourth, if a Canadian woman marries an alien, she becomes an alien. Five years' residence is required of those applying for naturalization.

The percentages of foreign born naturalized at the last two census dates are shown in Table LVIII by country of birth. A similar tabulation, Table 47, covering only adult males corresponds very closely to Table LVIII. Although the proportions naturalized among adult males are as a rule somewhat smaller than for the population as a whole, the rank of the different nationalities is much the same as when both sexes and all ages are included. The conclusions emerging from the present analysis, therefore, apply generally to adult males as well as to the whole population including women and children.‡

*See also 1931 Census, Vol. I, Chap. XII and XVI.

†Certain revisions were made in 1932, the year following the census. They, of course, do not affect the present study.

‡*Origin, Birthplace, Nationality and Language of the Canadian People*, pp. 140-141. The correspondence is not quite so close in 1931 as in 1921 probably because, in the last decade, immigration continued without much diminution till well on toward its close. Consequently, in 1931, unattached adult males of recent arrival constituted a generally larger proportion of the immigrant population than in 1921 and the data for the individual nationalities were more strongly influenced by variations in these proportions. The correspondence, however, is sufficiently close to warrant the present procedure.

The first outstanding characteristic of both tables is the remarkable spread in the percentages. At the top stand the Icelanders with 91.1 p.c. naturalized in 1931 (Table LVIII); at the bottom are the Chinese with only 7.0 p.c. Between these limits the twenty-eight other nationalities are fairly evenly distributed. As in 1921, naturalization has proceeded somewhat further with the North Western Europeans as a group than with the South, Eastern and Central Europeans (Table 45), but the difference is not so marked as at the former date nor does it carry through the linguistic groupings as is seen from the following figures. In 1931, 60.5 p.c. of the resident immigrants from Latin and Greek countries were naturalized, 55.1 p.c. from Scandinavian, 48.9 p.c. from Slavic countries and 46.1 p.c. from Germanic. Naturalization had thus proceeded further with the Latin and Greek immigrants than with the Scandinavians, and with the Slavs than with immigrants from Germanic countries.*

Such generalizations, however, do not adequately depict the situation. The tables must be studied in detail and the relative rank of each of the important countries noted. Wide disparities exist within both the geographical and linguistic groups. Of the South, Eastern and Central Europeans, the Yugoslavs (19.7 p.c.), Czechs and Slovaks (20.0 p.c.), Hungarians (22.4 p.c.) and Finns (28.7 p.c.) show the lowest proportions naturalized. The Danes (31.2 p.c.), Dutch (36.9 p.c.) and Swiss (41.4 p.c.) from North Western Europe rank next. The proportions then overlap until we come to the French with 66.1 p.c. and Icelanders with 91.1 p.c. Only for these two Northern Europeans nationalities do the figures exceed those for the Italians and Greeks who are at the top of the South, Eastern and Central European list. The Icelanders, a Scandinavian people, show a proportion naturalized larger than that of any other class of immigrants; the Danes, also a Scandinavian people, have a smaller proportion than any in the Latin and Greek or Germanic groups and than all but two in the Slavic.

A complete explanation of a high or low percentage is most difficult, but among the chief causes are probably cultural and other differences associated with nativity, occupational differences (e.g., naturalization or intention to naturalize is required of homesteaders), varying distribution as between rural and urban districts, diverse proportions of males and females and that most important factor, differences in length of residence in Canada. The effect of rural-urban distribution, sex and length of residence are discussed in subsequent sections of this chapter and a study is also made of the relative speed of naturalization for the more important immigrant groups. The reader is left to explain the individual figures for the several nationalities in terms of the aforementioned factors; but before leaving this part of the discussion an attempt should be made to account for some of the more important changes which have occurred during the past decade.

Taking the foreign born as a whole, the proportion naturalized dropped from 57.8 p.c. in 1921 to 54.8 p.c. in 1931. A major cause of this decline was undoubtedly the differing volumes of immigration in the years directly preceding the two census dates. From the outbreak of war to its conclusion immigration practically ceased and from 1919 to the 1921 Census it attained only modest proportions. Ample time to take out naturalization papers was thus available prior to the 1921 Census for the great majority of immigrants who came from allied or neutral countries during the decade. The heightened Canadian national consciousness prevailing during these years probably served as a special incentive to secure Canadian citizenship. In the last decade 1921-31, no significant reduction in immigration occurred until a year and a half before its close. In the absence of any phenomenal influx of settlers in the early years of the decade and with immigration continuing in fair volume right up to the depression, a much larger proportion of new arrivals was naturally included among the resident foreign born in 1931 than in 1921, as may be seen from the following figures. In 1921, resident immigrants of less than *six and a half* years residence in Canada constituted 16.9 p.c. of all immigrants; in 1931, resident immigrants of less than *five and a half* years residence represented 20.3 p.c. of the total. Of the immigrants resident in Canada in 1921, who had arrived during the preceding ten years, less than 40 p.c. had come during the last *six and a half* years of the decade; of the immigrants resident in Canada in 1931 who had arrived between 1921 and 1931, 62.5 p.c. had come during the last *five and a half* years of the period. The presence of an unusually large volume of recent immigration is undoubtedly the major single cause of generally lower proportions naturalized.

*The small percentages for the Finns and Hungarians explain the relatively low figure for the South, Eastern and Central Europeans as a group. The proportions naturalized for the Czechs and Slovaks (20.0 p.c.) and Yugoslavs (19.7 p.c.) were also low but these nationalities were included in both the linguistic and geographical classifications.

in 1931 than 1921.* An associated factor is sex. Male immigrants show smaller proportions naturalized than females. In 1921, 55.6 p.c. of all immigrant residents of Canada were males; in 1931, the proportion had increased to 56.3 p.c. Although the increase for the total immigrant population is small, a many times larger change must have occurred in the sex distribution of recent immigration to have effected even so moderate a rise in the proportion of males in the immigrant population as a whole. Restrictions on immigration to the United States which formerly drew off a considerable proportion of our floating alien population may also have been a contributing factor of some importance. It is in such terms that the decline in the proportion naturalized must be explained. What is true of the immigrant population in the aggregate applies generally to immigrants from individual countries of birth.

The behaviour of the data for certain nationalities was, of course, contrary to the general rule. Reference to earlier chapters will reveal that in most such cases immigration was retarded during the last decade; moreover in nearly every instance which was contrary to the trend, and notably so with the Italians, Greeks and Bulgarians, current immigration included unusually large proportions of women coming to join husbands and fiancés, who had preceded them to Canada. The wife and children of a naturalized foreign-born male are automatically naturalized on arrival in this country.†

TABLE LVIII.—PERCENTAGES NATURALIZED OF FOREIGN BORN, BY BIRTHPLACE, CANADA, 1921 AND 1931

Birthplace	P.C. Naturalized		Birthplace	P.C. Naturalized	
	1921	1931		1921	1931
Total.....	57.8	54.8	Spain.....	1	51.2
Iceland.....	86.4	91.1	Belgium.....	42.1	49.7
South America.....	1	79.8	Bulgaria.....	22.4	47.7
Armenia.....	58.4	75.5	Germany.....	63.9	47.1
Syria.....	85.3	74.1	Poland ¹	51.0	46.9
United States.....	65.3	72.4	Ukraine.....	54.7	44.7
Turkey.....	46.6	71.7	Switzerland.....	53.9	41.4
France.....	55.2	66.1	Japan.....	35.5	37.3
Italy.....	30.2	62.8	Holland.....	48.4	36.9
Greece.....	29.3	62.7	Denmark.....	56.3	31.2
Austria.....	59.4	59.9	Finland.....	45.7	28.7
Sweden.....	67.4	59.8	Lithuania.....	1	27.5
Russia.....	62.4	59.0	Hungary.....	72.3	22.4
Romania.....	60.6	57.5	Czechoslovakia.....	55.7	20.0
Norway.....	71.7	56.5	Yugoslavia.....	33.7	19.7
			China.....	4.8	7.0

¹ Separate data not available in the 1921 tabulation.

² Includes Galicia.

Naturalization among Immigrant Peoples from the United States.—Data on the naturalization of the United States-born immigrants are presented by racial origin in Column 1 of Table 48. Those of French and Icelandic origins show the highest proportions. The high figure for the French is not unexpected, in view of the rather marked movement of the children of former French-Canadian emigrants to the Eastern and Southern States back to Canadian soil, and especially to the provinces of Quebec and New Brunswick. Immigrants of Icelandic stock whether coming via United States or direct from Iceland were among the earlier arrivals. For a good many years practically no immigrants of this origin have been coming to Canada so that present residents have been domiciled in Canada for some time and for the most part include only those who have made permanent homes in this country. At the bottom of the list are the Negroes, the Hungarians, the Austrians and the Yugoslavs.

The significance of this table, however, lies not so much in the rank of the various stocks as in a comparison of the 1931 percentages with those for 1921 and in the relation between the behaviour of the United States born and that of the European born from corresponding countries

*The Pearsonian coefficient between the change in percentage naturalized and the percentage increase in the number of resident immigrants from the twenty-six countries of birth listed in Table LVIII for the decade 1921-31 works out to $R = -.44 \pm 0.16$. The fact that the correlation is negative indicates an inverse relationship. That the coefficient should be of such considerable size despite the neglect of other manifold compensating and interfering factors suggests that for immigrants as a whole, length of residence exerts an extremely important if not a dominating influence on the extent of naturalization. This relationship is discussed in a subsequent section of the present chapter. The legal residence requirements would, of course, contribute to this result in the case of very recent arrivals.

†Certain other less obvious influences were also at work such as rural-urban migration and the desire on the part of immigrants from some countries to rid themselves as speedily as possible of a national allegiance that had become distasteful. These influences will be discussed in a subsequent section of the present chapter.

of birth. In the latter connection, the reader is recommended to refer again to page 32, Introduction, for a discussion of the difficulties involved in comparing data on origin and country of birth statistics.

Comparison of the 1921 and 1931 figures shows that for twenty out of the twenty-three origins the percentages naturalized in 1931 exceeded those at the preceding census date and in most cases by very considerable amounts.* This change reflects the absolute decline which occurred in the number of United States-born residents in Canada during the decade. In Chapter II it was shown that there actually occurred a net emigration of persons of United States nativity in the ten-year period. This movement would affect the percentage naturalized in two ways. First, those who withdrew probably included a disproportionate number of persons who had not become naturalized and permanently settled in the country, and second, the mere fact that on balance the flow was away from Canada implies that few new arrivals came in during the decade. The present United States-born residents of the Dominion have, therefore, on the average, several years longer residence in the country than had those appearing in the 1921 Census.

In the absence of separate length of residence figures for the United States-born by racial origin, it is still impossible to say definitely whether a generation's residence in the United States is or is not conducive to early naturalization as compared with immigration direct from Europe. Indeed, the difficulty is increased in 1931 by virtue of the simultaneous cessation of the immigration from the States and the increase of immigration from Europe which further increased the spread in the average length of Canadian residence of immigrants from Continental Europe and Continental North America. This increased spread is reflected in the generally greater disparity between the percentages of North American and other foreign-born naturalized in 1931. In all but four instances the figures for the former nativity were the higher and in cases where recent European immigration was relatively heavy they were very considerably so. (Compare Cols. 1 and 2.)†

Date of Arrival and Naturalization.—When it is stated that 59.9 p.c. of the Austrians resident in Canada on June 1, 1931 were naturalized citizens as against only 20.0 p.c. of the resident immigrants from Czechoslovakia, comparison is made between the progress of naturalization among the two classes of immigrants as at that date. No inference is warranted as to relative speed of naturalization. If, however, the resident immigrants of each nativity are classified according to specified dates of arrival and it is found that, period for period, immigrants from one of the countries show higher percentages naturalized than do immigrants from the other, the conclusion would seem warranted that the former tended to naturalize more rapidly than the latter under conditions of occupational, sex, rural-urban distribution and so on existing at the time of and subsequent to their arrival in this country.

In a later section an attempt is made to isolate and measure the importance of differing lengths of residence in accounting for the variation in the proportions of the various nativities naturalized in 1931. In the present analysis, attention is confined to relative speed of naturalization as indicated by the percentages naturalized for immigrant groups of corresponding dates of arrival.

The term "speed of naturalization" as here employed requires some explanatory comment. It takes no direct account of immigrants who have come to Canada and, after remaining a time, have returned home or passed on to some other country. Yet, failing a definite change in attitude towards permanent settlement, a nativity which has been characterized by heavy withdrawals is likely to include among its resident population a large proportion of this temporary type of settler whose presence reduces the percentage naturalized as compared with that for persons of similar length of residence in other nativity groups. Speed of naturalization as measured by the relative percentages naturalized for the several dates of arrival is thus affected

*The three exceptions are the Austrian, Hungarian and Yugoslav origins. United States-born immigrants of the latter two origins were numerically small though contrary to the general trend, their numbers actually increased slightly during the decade. The difference between the 1921 and 1931 figures for the Austrian origin amounted to only 2.4 p.c. and may be associated with the withdrawal from the Austrian classification of a certain number of persons of German origin who improperly reported themselves as Austrian racial derivation in 1921. Their inclusion in the Austrian total for 1921 unduly raised the percentage naturalized for the latter origin group in that year.

†Of the exceptions, the Syrians were numerically unimportant. The explanation of the difference between the Austrian figures is the same as in the preceding footnote. European-born persons of Icelandic derivation were on the average earlier arrivals in this country than United States born of the same origin and included fewer unattached men who came to work in lumbering camps and more who settled as families on farms. The spread between the percentages for the Italians is negligible.

by the proportions of a given nativity who come to this country with the intention of staying only a few years, as well as by the rapidity with which those who contemplate permanent settlement take out naturalization papers.

Another point should also be made clear in connection with the speed of naturalization. Up to 1914 the law required a minimum of three years' residence in Canada prior to naturalization. In that year the residence requirement was changed to five years, and after the War a ten-year clause was inserted to apply to all subjects of enemy states. Further, naturalization was arrested during the War period for all enemy peoples. Thus the percentages naturalized from 1914 on must be interpreted with considerable caution.

It may appear strange that despite the five-year requirement certain proportions of those arriving after 1926 were naturalized by 1931. The majority of such were women or children who came to join husbands or fathers who had previously emigrated to this country, and by 1931 had completed all necessary residence requirements for naturalization. There are also a certain number of repatriated Canadians in the group, but no new adult male immigrants of foreign birth.

With the above considerations in mind, let us examine the figures. Table 49 shows the percentage naturalized of foreign-born residents in Canada in 1931 by date of arrival and country of birth. At the foot of the table will also be found the percentages for specified groups of countries of birth. These have been compiled from the census table showing the actual numbers naturalized for the separate nationalities. The data for each nativity are grouped into six periods of arrival.

For the North Western Europeans as a group higher percentages of persons arriving prior to January 1, 1916, were naturalized than for South, Eastern and Central Europeans of similar dates of arrival. For those arriving after that date the situation was reversed. This reversal is related among other things to a definite change in behaviour on the part of immigrants from the same countries of origin. The situation is somewhat clarified by an examination of the figures for the linguistic groups. Of all linguistic groups the Latin and Greek shows the lowest percentage naturalized for those arriving before 1916; for those arriving after that date they show the highest percentage naturalized. This shift of relative status is attributable to immigrants from Italy and Greece who show the highest proportions naturalized of all European immigrants arriving since the middle of the War. A very significant change has apparently occurred in the type of immigration from these countries. A much larger proportion of those who have come in recent years have come to stay than was formerly the case. With the adult males the desire to throw off the original allegiance and the fear of deportation in case of unemployment doubtlessly speeded up naturalization considerably. Many of the current arrivals, of course, were women coming to join husbands or fiancés who had previously come to Canada. With the Italians the proportion of females among resident immigrants jumped from 31 p.c. for the pre-1916 period to 43 p.c. for the later years, and in the case of the Greeks from 14 p.c. to 39 p.c. For these two nationalities the proportions of females were considerably below the average for all Europeans arriving prior to 1916 and appreciably higher in the post-War period. The mere fact of the presence of a larger number of women is indicative of a change in attitude. Obviously, fewer transients have been included in recent immigration from these countries and a larger proportion who either came with or shortly acquired the intention of taking up permanent residence in Canada.

Since the War the Slavs as a group rank next to the Latins and Greeks in speed of naturalization, their rates exceeding those for both the Germanic and Scandinavian peoples from 1916 on and usually by very considerable amounts. Among the recent urban immigrants from Slavic countries naturalization may have been unduly hastened through the desire to qualify for relief* and to free themselves from potential obligations to the home government; besides the Slavs who came during the years immediately following the War were relatively rapid naturalizers partly because of their predominant rural destination (homestead requirements) and partly because of the tendency for Slavs as a group to migrate as families. Reference to Table XVIII shows that the number of surplus males per hundred females all ages was only forty-seven for the aggregate of Slavic countries of birth, the smallest figure for any of the linguistic groups. By the same token the exceedingly large surplus of males for the Scandinavian group as a whole and for all members of that group except the Icelanders helps to explain the recent relative decline in the position

*The incidence of unemployment among Slavic immigrants might be expected to have been abnormally heavy because of the unusually large proportion of common labourers in this class of immigration (see Chap. XII).

of that group in the matter of taking out Canadian citizenship. Between 1921 and 1931 the surplus males for the Scandinavian born rose from seventy-five to one hundred and ten per one hundred females. Single unattached males normally do not naturalize rapidly. In seeking an explanation of the lower figures for the Scandinavians one should also take into account the fact that in Scandinavia, democracy still exists in practice as well as in theory, so that there is not the same incentive to throw off their old allegiance as may obtain with certain other classes of immigrants. The ten-year residence requirement which became law after the War for immigrants from enemy countries has undoubtedly retarded the naturalization among immigrants from Germany who dominate the Germanic group numerically.

The reader is left to examine the figures for the individual countries of birth. One or two comments, however, may be of assistance. Where a high figure occurs for immigrants arriving between 1926 and 1931 despite the usual five-year residence requirement such immigration includes either a large number of women and children who came to join husbands and fathers or to marry male immigrants who had come to Canada at some earlier date, or a large number of repatriated Canadian born or their descendants. In the former category might be included the Chinese, Japanese, Syrians, Italians, Greeks and Bulgarians; in the latter the United States born. The percentages shown in the column headed "total naturalized" are influenced not only by the speed of naturalization as indicated by the proportion naturalized for the various periods of arrival, but by the proportion who actually arrived in the various periods. A nativity group showing a high rate of naturalization may have a small total naturalized because of generally late emigration to Canada; conversely one with a moderate speed of naturalization may show a relatively high figure for the total because of relatively early arrival.

Urban Residence and Naturalization.—Table 50 shows the percentages of immigrants naturalized in cities of 30,000 and over by countries of birth and the corresponding proportions for all immigrants (i.e., both rural and urban). Column 3 gives the percentages by which the proportions naturalized among the foreign-born residents of large cities differ from the proportions for the country as a whole. An examination of Columns 1 and 2 of the table shows that while 54.8 p.c. of the foreign-born residents of Canada as a whole were naturalized in 1931, only 15.5 p.c. of those resident in cities of over 30,000 had become Canadian citizens. In other words, naturalization had proceeded only between a quarter and a third as far in the large cities as in the country generally. A similar spread existed for immigrants from individual countries of birth; in some cases the difference was larger, in others smaller, but it was uniformly in the same direction. Moreover, in every instance, the spread was much greater in 1931 than in 1921 reflecting, among other things, the relatively heavier immigration during the last half of the present decade and the increasing drift of new immigration to the cities. Despite continuous efforts to stimulate rural settlement, the larger cities in the Dominion found themselves with an abnormally large percentage of alien immigrants at the close of the decade. In 1921, 50.5 p.c. of foreign-born residents of cities of 25,000 and over were not naturalized; this figure compares with 84.5 p.c. for cities of 30,000 and over in 1931. The same type of change is indicated for each individual country of birth except Bulgaria and Greece. Both of these nationalities were among those mentioned above with generally larger proportions naturalized in 1931 because of failure to maintain the high percentage increases of the previous decade and the inclusion among current immigration of abnormally large numbers of women coming to marry earlier settlers or to join husbands who had preceded them to this country. Similar influences were strongly in evidence in the case of the Italians, but with that nativity they were apparently not quite powerful enough to raise the proportion naturalized in the larger cities above the 1921 figures.

The situation in 1931 then was analogous to that in 1921. The proportions of alien immigrants were much higher in the larger cities than in other urban and rural parts. Moreover, the spreads were greater in 1931 than at the close of the preceding decade. In all but two cases the proportions not naturalized of immigrants in the larger urban centres increased over the ten-year period and in many cases by very large amounts. The principal reasons for these changes are as stated above, but an attempt will be made to throw more light on their relative importance in a subsequent section of the present chapter. The question as to whether rural or urban residence *per se* is more favourable to naturalization will also be discussed.

Sex and Naturalization.—Table 51 shows the percentage of males and females naturalized by countries of birth. For the foreign born as a whole and for every country of birth except Iceland and Syria a larger proportion of the females than of the males have become Canadian

citizens. This result is precisely similar to that found in 1921 and is subject to the same explanation. In an immigrant population a larger proportion of the adult females is married. Married immigrants with homes and families are ordinarily more permanent settlers and normally should show a higher percentage naturalized. It is to be remembered also that females are naturalized by the mere fact of marriage with a Canadian citizen.

With reference to the two exceptions, the case of the Syrians is unimportant, and that of the Icelanders is capable of explanation on grounds similar to those advanced in 1921. Iceland is the one important country from which the number of females in Canada is greater than the number of males. The existence of a small surplus of unattached females would account for the fractionally lower percentage of that sex naturalized just as with other classes of immigrants the excess of males has a contrary effect.

The connection between the existence of a surplus of males and the lower proportion of males naturalized may be seen by comparing Table 51 with Table 20. With only minor variations which are more or less inevitable because of racial peculiarities and the varying degrees to which disturbing factors enter in, a large surplus of males is associated with a relatively large spread between the proportions of males and females naturalized in a given immigrant group. With single unattached males there is not the inducement to permanent settlement and the acquisition of Canadian citizenship that exists where a home is established and family responsibilities are assumed.

For both males and females the percentages naturalized were lower in 1931 than in 1921, reflecting the resumption of immigration in the post-War decade and its continuation in volume until almost the close of the period.

The Relative Effect of Length of Residence, Rural-Urban Distribution and Sex on Naturalization.—In the preceding paragraphs the effects of each of the above factors on naturalization were discussed separately without any attempt to make quantitative allowance for the influence of the others whose independent variations frequently obscured and interfered with the results. In the present section an attempt is made to determine the direction and extent of their joint and several influences by suitable mathematical devices. The procedure is analogous to that followed in Chapter VII when studying the various influences affecting intermarriage. A multiple correlation was worked out; the regression equation derived therefrom took the following form:—

$$X_1 = 1.9982 X_2 + 0.2749 X_3 - 0.0749 X_4 + 13.3418$$

where X_1 = the percentage of immigrants from a given country of birth naturalized (in 1931);

X_2 = the length of residence of the average (median) immigrant from corresponding countries of birth (in years) (see Table 15);

X_3 = the percentage of the corresponding nativity resident in urban centres;

X_4 = the percentage surplus of males.

By this means the joint and several influences of those independent variables (X_2 , X_3 and X_4) on naturalization (X_1) can be measured. The Chinese were omitted because the abnormally large surplus of males would distort a correlation with so limited a number of items (twenty-nine).

A number of interesting facts are revealed by the above equation. First, other things remaining equal, the longer the Canadian residence of the average immigrant, and the larger the proportion living in urban centres the higher is the proportion naturalized. Conversely, the larger the surplus of males, the smaller is the proportion naturalized. By substituting the standard deviations of X_2 , X_3 and X_4 , respectively, in the regression equation it is found that *length of Canadian residence was on the average a three times more potent factor in contributing to the expected differences in the proportions naturalized in 1931 than were differences in rural-urban distribution, and three and a half times more potent than differences in sex distribution* (see Fig. 37).

The computed relation between length of residence and sex distribution on the one hand and naturalization on the other is quite in accordance with expectation, both in respect to relative magnitude and direction. It is easy to understand in particular why long Canadian residence in itself is an important, indeed the most important, factor in explaining a high percentage naturalized. Some years are normally required to meet the legal requirements for securing Canadian citizenship, and apart from the legal aspect, it seems reasonable to suppose that the longer an immigrant group is resident in Canada, the larger will be the proportion that becomes economically assimilated and passes into the class of permanent settlers with the natural desire

or the full privileges of Canadian citizenship. It is also easy to understand why a large surplus of males should be associated with a low percentage naturalized, aside altogether from length of residence and other circumstances affecting naturalization. As was shown in Chapter III, surplus males are predominantly unattached adults, either single or without dependents in this country. Such a surplus contains large numbers who have not been permanently absorbed in Canadian industry, and many who have not decided to make Canada their permanent home. The presence of a large male surplus of this character in a given nativity group naturally makes for a lower percentage naturalized. Moreover, there seems no reason for doubting the conclusion reached by purely deductive processes that the relationship is a *causal* one, *viz.*, that long Canadian residence makes for a high percentage naturalized and that a large surplus of males makes for a small percentage.

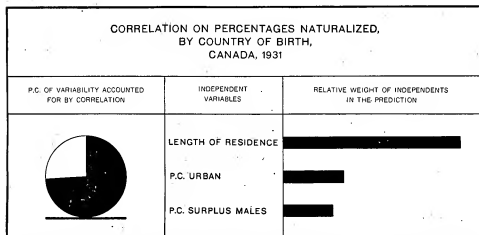


FIG. 37. Differences in length of Canadian residence, rural-urban distribution and the percentage surplus of males accounted for 74 p.c. of the variability in the percentages naturalized of immigrants from the various countries of birth in 1931. Length of residence was more important in the prediction than the other two variables combined.

With rural-urban distribution the indicated relationship was somewhat unexpected in view of the 1921 findings. Both the existence of a causal connection and its nature, if such exists, is much more difficult to determine. In the 1921 Monograph (see pp. 145-148) the thesis was advanced that rural residence *per se* was more favourable to naturalization because among other reasons, homestead laws required the taking out of Canadian citizenship before the granting of clear title to farm lands, and second, because agricultural settlement normally involved the creation of a more or less fixed interest in a specific piece of terrain in the adopted country and encouraged the settler to identify himself with the economic, social and political life of a given community. Although the more exact device of multiple correlation was not used, the above thesis seemed to derive adequate support from the data on pre-1921 immigration to leave little doubt as to its validity as describing conditions obtaining at and prior to that time. It seems paradoxical, therefore, to find a positive instead of a negative relationship* between the percentage urban and the amount of naturalization in 1931, and the question immediately arises as to whether certain changes have occurred during the decade which have made urban residence definitely more favourable to naturalization than rural, or whether the positive correlation is to be explained on some other grounds.

Several forces were at work during the ten-year period which may have raised the percentage of urban immigrants naturalized higher than might have been expected under existing conditions of length of Canadian residence, sex distribution and so on. Some of the more important ones are worthy of notice. First, urban industries were undoubtedly relatively more prosperous than agriculture over the period as a whole. *Other things being equal*, this in itself would hasten economic assimilation in urban as compared with rural parts and by the same token promote

*It is positive both in the simple and the multiple correlation.

naturalization. Second, from the autumn of 1929 to June, 1931, the desire to permanently qualify for relief and to escape the possible danger of deportation in the event of becoming a public charge through loss of employment,* may have induced many aliens who had the necessary residence qualifications to take out Canadian citizenship without delay. One would expect this influence to be much more important in urban centres than in rural, partly because of the superior organization of unemployment relief in the cities and towns and partly because the industrial worker having only his labour to sell finds himself immediately and entirely without means of support as soon as industrial conditions no longer permit his economic employment, while in the country an immigrant may be able to continue farm operations on a non-paying basis and wrest a living of sorts from the soil for some time after farming ceases to pay its way. Moreover, even when creditors do take over control of a farm property, the original operator is frequently permitted to carry on and is thus given a chance of earning a livelihood without going on relief. Third, it may well have been that immigration to rural parts contained larger numbers of unattached farm labourers and fewer permanent settlers than formerly. This circumstance would tend to reduce the speed of naturalization in rural areas. The joint and several importance of such influences is unfortunately impossible to determine, and the situation is further complicated by internal population changes which raise serious doubts as to whether, despite the above considerations, urban residence was actually more favourable to naturalization than was rural even during the last decade.

Probably the best method of explaining how the shifting of immigrant population from rural to urban sections affected the situation is by means of percentages. The 1931 Census reported 59 p.c. of the immigrant population which had arrived during the last decade as resident in urban centres and 41 p.c. in rural. At the same time 75 p.c. of the *net increase* in immigrant population after making due allowance for deaths, occurred in towns and cities and only 25 p.c. in country parts.† This means either that there was a very considerable movement of pre-1921 rural immigrants to the cities or that the cities retained a much larger proportion of their earlier immigration than did the country. A study of the absolute numbers suggests that both occurred. Now in the past, rural immigrants of ten or more years' residence almost invariably showed higher percentages naturalized than urban immigrants in the same category and a rural-urban migration of any significant volume of this class of immigrant, by raising the proportion naturalized in cities and reducing it in the country, might make it appear that urban residence *per se* was more favourable to naturalization when the reverse was actually the case. The rural loss of pre-1921 immigrants was in the neighbourhood of 154,000 during the decade. On the assumption that urban centres retained 100 p.c. of their pre-1921 immigrants, which is extremely unlikely, a minimum of 21,000 of the rural exodus must have settled in urban parts. The actual figure was probably several times that number. It exceeded 21,000 by the number of pre-1921 urban immigrants who left Canada during the decade—a number which was undoubtedly great but can not be determined from existing records. The urban losses through the emigration of pre-1921 immigrants would consist mainly of aliens; the gains through the cityward movement of early rural settlers would include disproportionately large numbers of naturalized.

The question then as to whether rural or urban residence *per se* was more favourable to naturalization during the last decade is still unsettled. All one can say with certitude is that in 1931, *after due allowance is made for possible differences in length of residence and sex distribution*, a nativity with a larger than average percentage resident in towns and cities might be expected to show a higher percentage naturalized than one with a larger than average percentage rural.

When the expected proportions naturalized for the several nativities are computed on the basis of the preceding regression equation and compared with the actual percentages shown in the census, it is seen that length of residence, rural-urban distribution and sex account for by no means all the differences. As a matter of fact, the correlation coefficient of .87 indicates that only about three-quarters of the differences‡ may be attributed to the combined influence of these factors. The following table shows the actual as a percentage of the expected proportion naturalized for the respective nativities and arranges them in rank. The same data is presented graphically in Fig. 38.

*As a rule during periods of economic stress, single workers without dependents are discharged first. The incentive to naturalize, therefore, would be particularly great with the classes of immigrants in which under normal conditions the percentage naturalized is small.

†Hurd, W. B. and Cameron, J. C.: *Population Movements in Canada, 1901-31—Some Further Considerations*, The Canadian Journal of Economics and Political Science, Vol. 1, No. 2, May, 1935, pp. 237-238.

‡Stated more accurately of the squares of the differences, i.e., the variability.

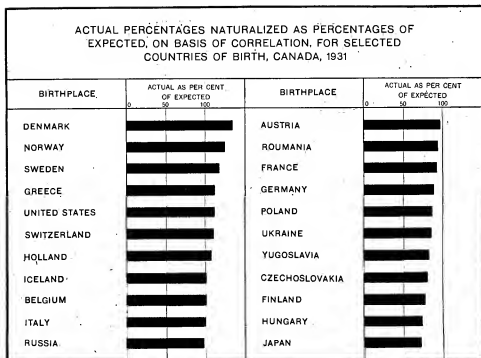


FIG. 38. The above chart shows the proportions by which the percentages of resident immigrants naturalized by 1931 differed from expectation on the bases of length of residence, sex and rural-urban distribution. Eccentric behaviour of one or more of these independent variables introduced an appreciable upward bias in the figure for the Danes and a slight upward bias in those for several of the other North Western European natives. From the standpoint of actual performance, post-War immigrants from Latin, Greek and Slavic countries showed on the whole, absolutely higher percentages naturalized by year of arrival than did those from Scandinavian and Germanic countries of birth.

TABLE LIX.—ACTUAL AND EXPECTED PERCENTAGES NATURALIZED, BY BIRTHPLACE, ARRANGED IN ORDER OF MAGNITUDE OF ACTUAL AS PERCENTAGE OF THE EXPECTED, CANADA, 1931

Birthplace	P.C. Naturalized		Actual as P.C. of Expected
	Expected	Actual	
Armenia.....	54	76	141
Denmark.....	24	31	135
Turkey.....	24	31	131
South America.....	56	73	129
Norway.....	62	80	125
Sweden.....	46	57	118
Greece.....	51	60	112
United States.....	56	63	112
Switzerland.....	64	72	111
Holland.....	37	41	108
Poland.....	34	37	101
Belgium.....	34	37	101
Italy.....	30	31	101
Russia.....	50	50	100
Austria.....	63	63	98
Roumania.....	60	59	97
France.....	62	60	94
Germany.....	62	58	93
Poland.....	71	66	89
Ukraine.....	53	47	87
Syria.....	54	47	86
Spain.....	53	45	85
Yugoslavia.....	87	74	85
Czechoslovakia.....	60	51	83
Finland.....	24	20	81
Hungary.....	26	20	78
Lithuania.....	37	29	74
Japan.....	30	22	73
	38	28	72
	52	37	

An examination of the above figures shows that with seven of the nine North Western European countries of birth, naturalization had proceeded further than was expected on the basis of the three independent variables included in the correlation, while with eleven out of the thirteen South, Eastern and Central European nativities the actual was below expectation. The question arises as to how far these variations from expectation are the result of distortion of the expected through eccentric behaviour of one or more of the independent variables within the equation, and how far they are attributable to extraneous causes. An examination of the work sheets shows that while a slight downward bias appears in the expected values for Norway, Sweden, Greece, Switzerland and Holland, only in the case of Denmark was the downward bias really serious. The excess in the actual percentage naturalized was thus probably somewhat less than the figures indicate for the five nativities first listed and appreciably less for the Danes. In the lower section of the table there appear to be only two cases where the expected was seriously distorted upward, *i.e.*, France and Syria. The conclusion, therefore, seems to be that while the indicated excess of the actual over the expected is somewhat larger than it should be for certain of the North Western European peoples (and considerably larger for the Danes) the relative positions of the various nativities on the whole is not materially affected by causes within the correlation itself.

When the deviations from expectation are correlated with the index of *segregation* for corresponding nativities as given in Chapter VI, little or no relationship is found to exist. The coefficient was quite small and unreliable ($R = .256 \pm .133$).^{*} Such being the case, it would seem that the principal explanation of the variations from expectation must be sought in such factors as occupational and religious distribution where manifold classification prevents their influence being evaluated by ordinary correlation technique, and other social, cultural and psychological characteristics which do not lend themselves to statistical measurement.

Finally, it should be kept in mind that the dependent variable in the correlation was the percentage of *all* immigrant residents naturalized at the date of the last census (1931); and the difference between the actual and the expected for the individual nativities, in so far as it is attributable to factors extraneous to the correlation, is in a sense a cumulative residuum deriving from the recorded behaviour of early as well as current immigration. Had the correlation dealt only with post-War immigrant arrivals the relative positions of the various nativities might have been quite different owing to an indicated change in attitude toward naturalization on the part of certain classes of settlers, particularly those from Latin and Greek and Slavic countries. Variation from expectation merely means that the percentage naturalized by 1931 was greater or less than anticipated on the basis of average length of Canadian residence and sex and rural-urban distribution of *all* resident immigrants from a given country of birth. On this basis, the Slavs fell short of expectation; yet on the basis of actual performance, they with the Latins and Greeks, showed absolutely higher proportions of *post-War* resident immigrants naturalized than either of the North Western European groups.

Percentages Naturalized by Provinces.—Table 52 shows the percentages of immigrants naturalized for Canada and for the respective provinces in 1931, by country of birth. Attention is first directed to the percentages for the total foreign born. Considerable fluctuation appears in the provincial figures. For Canada the proportion naturalized was 54.8 p.c. In Prince Edward Island the proportion was 72.7 p.c.; in British Columbia it was only 43.1 p.c. Thus, while Prince Edward Island shows a 17.9 p.c. (72.7 p.c.—54.8 p.c.) larger proportion of the foreign born naturalized than the Dominion as a whole, British Columbia shows a percentage naturalized some 11.7 p.c. (54.8 p.c.—43.1 p.c.) smaller than that for the Dominion. It is apparent that the extent to which naturalization has proceeded in the various provinces differs widely. The general picture is very similar to that of 1921. By 1931, as at the preceding census date, naturalization was further advanced in the Maritimes and the Prairie Provinces than in Ontario and Quebec or on the west coast (see also Table 53). Moreover, a remarkable uniformity is still apparent in the *direction* of deviation in the percentages for the individual nativities from province to province.†

The principal reasons for those differences have been suggested elsewhere.‡ The provinces differ as to rural and urban distribution of the foreign born. They differ also as to average length

^{*}The Japanese were not included because their exceedingly high degree of segregation would have had undue weight in a correlation with a limited number of terms and would have produced a spurious result.

†A detailed discussion of the data for individual countries of birth was made on the basis of the 1921 figures (*Ibid.*, pp. 152-153). Time and space preclude the making of a similarly detailed analysis in the present monograph. Where exceptions to the general rule obtain they can usually be explained in terms of date of arrival, rural-urban distribution and sex.

‡*Ibid.*, p. 153.

of residence of their immigrant population, its sex and occupational distribution and its racial composition. Similar differences, with the possible exception of lack of uniformity in racial derivation, characterize the different sections of the individual nativity groups which are found in the several provinces. This circumstance, obviously, explains the high degree of uniformity in the *direction* of deviation mentioned in the preceding paragraph. One should keep in mind, however, that variations in the proportions naturalized are by no means entirely attributable to extraneous and environmental causes. Length of residence is, of course, largely circumstantial but both sex and rural-urban distribution are to some extent matters of emigration practices and occupational preferences associated with birthplace and racial origin; in addition there are the many cultural and psychological factors which are of an essentially ethnic nature. Such considerations can hardly be ignored in the light of the marked differences between the racial and nativity composition of the immigrant populations of the several provinces to which attention was drawn in an earlier chapter.*

From the standpoint of the political scientist, the real significance of naturalization figures emerges when they are expressed in terms of the population as a whole. These ratios are presented in Table LX. In 1931, the naturalized foreign born formed a four times larger percentage of the population in Manitoba than in Ontario, and in Saskatchewan and Alberta, the proportions were over six times larger. On passing eastward from Ontario, the disparity between the Eastern and Western figures increases. The naturalized foreign born do not constitute so large a proportion of the population in British Columbia as on the Prairies, yet the figure for even that province is several times greater than that found in any province east of the Great Lakes. The recorded differences would be even more marked if the numbers of naturalized foreign born were compared with the Canadian- or British-born population of each province; and were allowances made for the preponderance of adults among persons of alien birth it would be found that the proportions which the votes of naturalized aliens constitute of the total votes would be considerably higher all round than the figures shown in Table LX, Column 1.

As was pointed out in a preceding chapter, it is not so much the magnitude of the foreign-born population in the aggregate as its relatively unequal distribution that is a cause for concern on the part of the statesman and the social scientist. When certain sections of the Dominion have abnormally large concentrations of foreign-born citizens accustomed to different systems of government and lacking in understanding of and reverence for British institutions and ideals, differences in social and political attitudes can not but be greater than would otherwise be the case. Nor is it merely the disproportionate number of *foreign born* that is of importance. The difference goes much deeper. For several decades alien immigration has been so unevenly distributed that the *origin* structure of the West differs radically from that of the East so that to fully appreciate the existing differences of culture and of social and political outlook, one must take into account not only the foreign-born but their descendants, in many cases to the second or third generation. A population with a mixed political and cultural background is likely to be less inhibited by tradition, more fickle in its loyalties and more prone to political and social experimentation than a homogeneous population with a common cultural inheritance.

*See Chap. IV.

TABLE LX.—PERCENTAGES NATURALIZED OF FOREIGN BORN AND THE NATURALIZED FOREIGN BORN AS PERCENTAGE OF THE TOTAL POPULATION IN EACH PROVINCE, CANADA AND PROVINCES, 1921 AND 1931

Province	(1) Naturalized Foreign Born as P.C. of Total Population		(2) P.C. of Foreign Born Naturalized		(3) Foreign Born as P.C. of Total Population	
	1921	1931	1921	1931	1921	1931
CANADA.....	5.80	5.94	57.8	54.8	10.13	10.82
Prince Edward Island.....	1.19	1.35	81.3	72.7	1.46	1.85
Nova Scotia.....	1.48	1.80	35.5	63.8	2.67	2.87
New Brunswick.....	1.86	2.02	67.2	70.7	2.77	2.86
Quebec.....	2.28	2.67	54.5	52.8	4.18	4.90
Ontario.....	2.87	3.02	46.3	48.4	6.21	8.09
Manitoba.....	11.48	11.21	64.1	60.2	17.91	18.61
Saskatchewan.....	18.65	16.72	70.9	65.1	26.31	23.60
Alberta.....	18.30	16.05	61.9	56.3	29.56	26.90
British Columbia.....	7.71	7.59	40.5	43.1	19.02	18.72

During the past decade the disparity in origin structure has been accentuated through natural increase, but that in the proportion of naturalized aliens has shown some slight reduction with the moderate shift in immigration from the agricultural West to the more industrial East. As a result, in each of the five eastern provinces, naturalized aliens constituted somewhat larger proportions of the total population in 1931 than in 1921, and somewhat smaller proportions in all four western provinces. The beginning of a levelling-out process was thus apparent during the last decade but it was abruptly stopped in so far as it was being effected through new settlement by the almost complete cessation of immigration after 1931.

It is of interest, in passing, to compare the immigrants from the different countries as to consistency of behaviour in respect to naturalization in the various parts of Canada. Table 54 shows the range of fluctuation by country of birth. The range is admittedly a very crude index of consistency or dispersion, and were the subject of sufficient importance from the point of view of this study, the average or standard deviations would have been computed. However, the purpose here is merely to show that marked differences do appear in the extent of variation in the proportions of the various foreign-born peoples naturalized as between different sections of the country; or, to put it in another way, that the naturalization of certain peoples is greatly influenced by differences in rural and urban distribution, geographical and occupational environment, and distribution as to time of arrival, etc., while in other cases the influence of these factors is comparatively small.

The range of 59.1 p.c. for the Finns in Table 54 was computed by taking the lowest percentage of that immigrant group naturalized for any province, from the highest. In that case the lowest occurred in Quebec, where only 7.7 p.c. were naturalized in 1931 and the highest in Alberta, where the figure was 66.8 p.c. The difference is 59.1 p.c. (66.8 p.c. — 7.7 p.c.), and this figure is the largest shown by any nativity group. The ranges of 13.8 p.c. for the Icelanders and 14.5 p.c. for the United States born are at the other extreme. The small magnitude of the range in each of these cases indicates marked consistency in the progress of naturalization in different sections of the Dominion. With them naturalization has advanced not only to a marked extent but to a very uniform degree in all provinces. In the case of the Chinese with a 17.4 p.c. range, consistency, but of a different sort, is shown. The Chinese have been consistent throughout Canada in the small percentage naturalized up to 1931. And so the table may be examined. In all but five instances there was greater uniformity in 1931 than in 1921 and in three out of those five the difference was so small as to be more or less negligible.

CHAPTER IX

LANGUAGE

Canada is the meeting place of many peoples. Within her boundaries many tongues are spoken. The development and use of a common medium of communication has in the past conditioned the emergence of human societies. Unless individuals can make known to the other members of the group their feelings and thoughts, and unless they in turn are able to understand and appreciate the emotions and ideas of their fellows, a group consciousness is impossible. The "animated moderation" which has gradually been replacing the rule of force is based on discussion which, in turn, is conditioned by the ability to converse. Common media of communication are as important in modern democracies as with primitive peoples.

In Canada, there are two official languages, French and English.* Before considering the extent to which immigrants from other countries are learning one or both of these, it is of interest to examine how far those of French origin have learned to speak English and those of British origin to speak French. The following percentages have been computed from the 1921 and 1931 Census tables on language spoken by the Canadian population 10 years and over.

TABLE LXI.—PERCENTAGES OF THE POPULATION OF BRITISH RACIAL ORIGIN REPORTED AS ABLE TO SPEAK FRENCH AND PERCENTAGES OF THE POPULATION OF FRENCH RACIAL ORIGIN REPORTED AS ABLE TO SPEAK ENGLISH, CANADA, 1921 AND 1931

Racial Origin and Sex	P.C. Able to Speak			
	English		French	
	1921	1931	1921	1931
French—				
Both sexes.....	50.8	49.4		
Male.....	57.7	55.6		
Female.....	45.0	43.2		
British—				
Both sexes.....			4.8	4.2
Male.....			5.1	4.5
Female.....			4.4	3.9

Two points are of interest in the above table. First, the striking difference between the proportion of French who have learned English, and the proportion of those of English-speaking origins who have learned French. While approximately half of the French people 10 years of age and over reported themselves as able to speak English, less than one-twentieth of the English of similar age claimed to be able to speak French at the time of the last census. However, this comparison is somewhat misleading. The learning of a language other than the mother tongue is largely a matter of social and especially of economic convenience, and the proportions of the British and French stocks among whom it is a matter of convenience to learn the other language are very different. While 22.5 p.c. of the French in Canada are domiciled outside Quebec, i.e., in provinces where English is the dominant language of the people, only 8.0 p.c. of the English-speaking peoples are resident in the province of Quebec where French is the native language of the great majority of the population. When the number of English who have acquired French is expressed as a proportion of the total of English-speaking origins in Canada, of whom perhaps only 10 to 15 p.c. ever come into contact with French-speaking Canadians, the result is hardly comparable with that for the French, with 25 to 30 p.c. living among English-speaking Canadians.

A much fairer comparison is between the English-speaking stocks in the province of Quebec, and the French in parts of Canada outside that province. Of the former, 31.8 p.c. (10 years and over) were able to speak French at the date of the census; of the latter, 84.4 p.c. (10 years and over) reported themselves as being able to speak English. These percentages are much more representative, for they apply where conditions affecting the learning of the other language are more or less equal save for possible differences in the relative degrees of segregation on the part of the groups concerned.

*See also 1931 Census, Vol. I, Chaps. X and XI.

The second point of note in Table LXI is that in each case the percentage of males able to speak the language of the other was greater than the percentage of females reported as able to do so. The influence of business and economic forces in stimulating among the males the learning of the language of the other dominant stock is undoubtedly of considerable moment.

Both the percentages of English who had learned French and of French who had learned English were slightly smaller in 1931 than in 1921. Whether this change is significant is difficult to say.

Proportions Unable to Speak English or French.—Turning now to the extent to which the immigrant peoples have related themselves to the language spoken by those of French and British origins in Canada, Table LXII shows the percentages, 10 years of age and over, unable to speak (1) English and (2) English or French, in 1921 and 1931, for the principal non-British, non-French origins. Table 55 gives the same information by geographical and linguistic groups.

The first point of interest is the progress, and in some instances the apparently remarkable progress, made during the past decade in learning either one or other of the languages of the country. For most of the progress in the learning of English and French the public school is responsible. It is true that many adult immigrants especially in urban parts do acquire a working knowledge of one or other of the languages of the dominant sections of the population provided they are not too old to do so and they have an adequate economic or other incentive. This incentive, however, is sometimes lacking particularly where an ethnic group tends to settle in blocs, especially in rural parts. Were the data tabulated by five-year age groups as in the case of illiteracy one would find ample statistical support for this statement.* The percentages in these tables apply to the total population of each origin 10 years of age and over and therefore, include children. All children in Canada are required by law to attend school at least to 14 years of age and teaching in the schools is carried on in either English or French. Consequently in an origin group with high fertility, the percentage unable to speak either of the basic languages of the country may be expected to decline with a fair degree of rapidity provided current immigration is not heavy. Outstanding instances of this sort are the Japanese where the proportion declined from 41.1 p.c. to 21.5 p.c. during the decade, and the Ukrainians where the percentage dropped from 26.2 to 15.3 p.c. The effect of relatively large immigration on the proportions unable to speak either French or English is illustrated by the Czech and Slovak, Finnish, Hungarian, Yugoslavic and Polish origins (see Chapter II). For these five races actual increases occurred in the proportions unfamiliar with either of the official languages of the Dominion. The increase recorded for the Germans is explained by the inclusion under that heading of many who in 1921 reported themselves as of Austrian or Russian extraction.

Taking the South, Eastern and Central Europeans as a whole some 4.5 p.c. fewer were unable to speak either French or English in 1931 than in 1921, and the decline would have been even greater had it not been for moderately large immigration from those sections of Europe during the period. With the North Western Europeans, the proportion decreased only 0.6 p.c. but the proportion unable to speak either of the Canadian languages at the beginning of the decade was insignificant (3.0 p.c.) as compared with that for the South, Eastern and Central Europeans (17.5 p.c.). Arrested immigration coupled with relatively high fertility (see Chapter XIII) is largely responsible for the significant decline in the percentage for the Latins and Greeks. Further comparison of the figures for 1921 and 1931 will reveal many additional points of interest. The outstanding fact, however, is that during the decade considerable progress has been made in the matter of learning the official languages of the Dominion; in 1931 an appreciably smaller proportion of the population was unable to speak either language than in 1921.

This statement must not be taken to imply, however, that relatively large numbers of many origins are not still unable to speak either of the basic languages of the country. The North American Indians (31.0 p.c.), Chinese (29.5 p.c.) and Japanese (21.5 p.c.) show large proportions unable to do so. As in the case of assimilation by intermarriage with the basic stock in the country, so in the matter of learning the languages of the nation, these coloured races are far behind the others. Some 13 p.c. of the South, Eastern and Central Europeans were still unable to speak either English or French in 1931 and the figures for several origins in the group are even higher. This applies especially where there has been heavy recent immigration.

*See Hurd, W. B. and Grindley, T. W.: *Agriculture, Climate and Population of the Prairie Provinces of Canada*, Dominion Bureau of Statistics, King's Printer, Ottawa, p. 97, for quinquennial age distribution of illiterates.

Persons of Scandinavian origin on the whole speak either English or French in the largest numbers. Most of them speak English; comparatively few speak French. Of the Scandinavian stocks, the Icelandic shows the largest percentage unable to speak the languages of the country. It is interesting to recall that of the Scandinavians they also showed the least tendency to intermarry with the native British or French stock in Canada and the greatest tendency to (rural) segregation. The Germans followed the Danes, Norwegians and Swedes with only a slightly larger percentage unable to speak either of the basic languages. The figure for the Dutch was somewhat higher probably because of the inclusion of the Mennonites who settled in rural colonies and have attempted to maintain a distinctive culture; then came those for the Italians and Greeks who with the Roumanians (a more rural people) were on a still higher level. The Slavs as a group showed by far the largest percentage among the linguistic groups unable to speak either language and of the Slavs the Ukrainians had slightly the largest proportion unable to do so.

TABLE LXII.—PERCENTAGES UNABLE TO SPEAK (1) ENGLISH (2) FRENCH OR ENGLISH, OF THE POPULATION 10 YEARS OF AGE AND OVER, FOR THE PRINCIPAL NON-BRITISH AND NON-FRENCH RACIAL ORIGINS, CANADA, 1921 AND 1931

Racial Origin	P.C. Unable to Speak			
	English		English or French	
	1921	1931	1921	1931
Austrian, n.o.s.	18.3	8.4	18.2	8.2
Belgian	17.1	8.8	4.1	1.4
Bulgarian	18.3	11.8	18.0	10.9
Chinese	32.2	29.0	32.1	29.5
Czech and Slovak	6.4	14.3	6.2	14.1
Danish	1.4	1.3	1.4	1.2
Dutch	7.7	3.9	7.7	3.9
Finnish	14.8	17.7	14.1	17.7
German	1.9	2.7	1.7	2.5
Greek	7.6	6.5	6.5	5.9
Hebrew	5.7	3.3	5.4	3.2
Hungarian	10.5	17.3	10.4	17.2
Icelandic	5.9	3.0	5.9	3.0
Indian	45.6	33.1	43.9	31.0
Italian	19.0	9.5	12.3	5.4
Japanese	41.1	21.5	41.1	21.5
Norwegian	1.4	1.4	1.3	1.3
Polish	13.8	14.0	13.6	13.8
Roumanian	13.7	9.7	13.4	9.4
Russian	17.0	13.2	16.9	13.1
Swedish	2.3	1.0	2.2	1.6
Syrian	9.2	6.9	3.9	2.0
Ukrainian ¹	26.2	15.4	26.2	15.3
Yugoslavia	9.1	14.2	8.9	14.1

n.o.s.—not otherwise specified.

¹Includes Bukovinian, Galician, Ruthenian and Ukrainian.

Proportions Speaking English or French as Mother Tongue.—Another aspect of the relation between racial origin and language in Canada, is the extent to which the non-British and non-French stocks speak English and French as the *mother tongue*. One would expect the data on this point to show a somewhat marked relation to the figures for intermarriage with the two basic Canadian stocks. Where English or French is spoken in the home as the mother tongue, the inference is that intermarriage has taken place and/or that a larger percentage of the stock has lived for a considerable time in Canada. While the relation with length of residence and amount of intermarriage will not be examined at this point, the data in respect to the numbers of the non-British and non-French origins who speak English or French as the mother tongue, are presented in Tables LXIII, 56 and 57.

Had the Japanese, Chinese and Indians been shown in the adjacent table the percentages for those origins would have appeared insignificant. Only 1.9 p.c. of the Ukrainian and Hebrew origins spoke English or French as the mother tongue in 1931. Several other origins which on the whole have been late arrivals in Canada also show very small percentages, e.g., the Yugoslavic (2.5 p.c.), the Hungarian (2.8 p.c.), the Finnish (3.7 p.c.), the Czech and Slovak and Polish (5.6 p.c.). From these figures to the Dutch with 67.2 p.c. is a wide spread.

The difference between the peoples of North Western Europe and those of the South, East and Centre, is more marked in this than in any table presented heretofore. There is no overlapping. All of the northern stocks, with the exception of the Icelandic, showed proportions several times as great as the highest of the South, Eastern and Central European peoples. The percentages for the North Western Europeans as a group were nearly eight times greater.

Table 57 classifies the principal European stocks by linguistic groups. A marked disparity appears between those of Scandinavian and Germanic origin in the matter of speaking English or French as their mother tongue. The percentages for those of Dutch and German origin are considerably higher than are those for the Scandinavians. Yet the strange point is that, with the exception of the Icelandic, the Scandinavian peoples on the average show a percentage unable to speak either French or English, lower than the Germans, and all the Scandinavians, including the Icelandic, are lower than the Dutch (see Table 55). The explanation is found in the fact that somewhat larger proportions of the Norwegians, Swedes and Danes had learned English outside the home, than was found in the case of the Germans, and considerably larger proportions than in the case of the Dutch.

Both these Northern European groups (the Germanic and Scandinavian) speak English or French as the mother language to a far greater extent than do the Southern and Eastern Europeans. There is not so much difference between the Latin and Greek and the Slavic peoples in this respect. The Greeks are the highest in the former group and the Austrians in the latter. Of all European origins the Ukrainians have the lowest proportion speaking one of the Canadian languages in the home (1.9 p.c.) and it is recalled that of those coming from Continental Europe they were among those who showed the smallest percentages marrying outside their group and the smallest percentages intermarrying with the British and French.

TABLE LXIII.—PERCENTAGES SPEAKING (1) ENGLISH (2) ENGLISH OR FRENCH AS MOTHER TONGUE, OF THE POPULATION 10 YEARS OF AGE AND OVER, FOR THE PRINCIPAL NON-BRITISH AND NON-FRENCH RACIAL ORIGINS, CANADA, 1921 AND 1931

Racial Origin	P.C. Speaking as Mother Tongue			
	English		English or French	
	1921	1931	1921	1931
Austrian, n.o.s.	3.4	10.1	3.5	10.4
Belgian	25.0	10.1	37.8	35.5
Bulgarian	3.2	5.5	3.4	6.3
Czech and Slovak	10.4	5.5	10.5	5.6
Danish	31.1	29.7	31.2	29.9
Dutch	72.2	67.1	72.3	67.2
Finnish	3.0	3.7	3.0	3.7
German	45.9	41.2	46.0	41.8
Greek	8.5	12.1	8.8	13.3
Hebrew	3.5	1.9	3.5	1.9
Hungarian	3.2	2.7	3.3	2.8
Icelandic	6.1	14.3	6.1	14.4
Italian	5.5	7.7	7.5	9.8
Norwegian	17.0	25.3	17.1	25.5
Polish	5.5	5.4	5.5	5.6
Roumanian	2.8	5.7	2.9	6.0
Russian	4.2	7.5	4.2	7.6
Swedish	17.4	24.1	17.4	24.2
Swiss	60.5	—	61.8	—
Syrian	7.8	11.6	9.5	14.5
Ukrainian ¹	0.6	1.8	0.6	1.9
Yugoslavic	5.0	2.5	5.1	2.5

¹ Included with French, German or Italian in 1931.

² Includes Bukovinian, Galician, Ruthenian and Ukrainian.

Proportions of Non-British and Non-French Origins Acquiring English.—While the figures in Table 55 constitute a satisfactory index of the amount of linguistic assimilation which has already taken place and, by permitting comparison between 1921 and 1931 data, serve as a rough measure of progress during the decade, they fail to reflect with any degree of adequacy the extent to which the more recent arrivals of the various origins have acquired a speaking knowledge of the basic languages of the country. Table 57 (Col. 6) and Table 59 show the progress in learning English made by that portion of the several origins who did not speak English as the mother tongue. The figures in these tables really measure the progress made in learning English outside the home—in school or in business.

As might be expected on the basis of length of Canadian residence, the percentage of the average North Western European origin who had acquired English other than as mother tongue was considerably higher than that for the average South, Eastern and Central European origin. Of the North Western Europeans, the figure for the Scandinavians was appreciably higher than the average for the Germanic group because of the inclusion of the Belgian and Dutch figures in the latter average. Many of the Belgians speak French as the mother tongue and of these many did not learn English because they already knew one of the official languages of the country. The relatively low figure for the Dutch is explained by the practice among the Mennonites in the West of reporting themselves as of that origin. The attitude of that people toward Canadian schools and other Canadian institutions is well known as is their tendency to rural segregation to which reference has already been made. Of the South, Eastern and Central Europeans the Latins and Greeks had acquired English outside the home to a somewhat larger extent than the Slavic races.

A comparison of the 1931 and 1921 figures (see 1921 Monograph, Table 99, p. 164) shows that the 1931 figures were, in general, appreciably higher than those in 1921. This is notably so with the Belgians and Dutch among the North Western Europeans. The 1921 figures for the other origins in this category were already so high that any marked increase was impossible. Among the South, Eastern and Central Europeans, increases were most pronounced with the Ukrainians, Austrians and Italians. Significant increases also occurred with the Roumanians and Russians. All of these origins are in the high-fertility category and have large and increasing numbers of children attending school. Actual decreases in the percentages acquiring English occurred in the case of certain origins like the Czech and Slovak, Finnish and Hungarian who have received relatively large additions from abroad in recent years.

How far these differences are attributable to distinctively racial causes and how far they are affected by length of residence, rural and urban distribution, segregation, etc., is discussed in a subsequent section.

Proportions of Non-British and Non-French Origins Acquiring French.—Table 59 shows the number and proportion of the various origins not using French in the home who had acquired at least a speaking knowledge of that language by 1931. The general run of the percentages is from 1 to 5 as compared with 80 to 90 for those acquiring English (Table 58). The reason, of course, is because of the relatively small proportion of immigrant stocks found in the French province of Quebec as compared with the rest of Canada where English is the dominant language. Five exceptions are worthy of note: 39.0 p.c. of the Belgians who did not speak French as the mother tongue had acquired it by the date of the last census, 37.0 p.c. of the Syrians, 23.3 p.c. of the Italians, 17.6 p.c. of the Greeks and 15.9 p.c. of the Hebrews. All of these origins show relatively larger proportions living in Quebec, especially in Montreal and vicinity.

THE RELATION BETWEEN LANGUAGE AND VARIOUS ASSOCIATED FACTORS

Intermarriage and Mother Tongue.—That intermarriage and the proportion speaking English and French as the mother tongue are very closely connected may be seen at a glance from Table LXIV. In practically every instance, a high percentage speaking one of the official languages of Canada in the home, is associated with a large amount of intermarriage with the British and French and *vice versa*. The two phenomena are closely connected, statistically as well as logically.

TABLE LXIV.—PERCENTAGES SPEAKING ENGLISH OR FRENCH AS MOTHER TONGUE, OF SPECIFIED RACIAL ORIGINS¹ AND PERCENTAGES OF MALES MARRIED INTO BRITISH AND FRENCH STOCKS, CANADA, 1931

(As indicated by the parentage of children born in Canada in 1931)

Racial Origin	P.C. Speaking English or French as Mother Tongue	P.C. of Males Married into British and French Stocks	Racial Origin	P.C. Speaking English or French as Mother Tongue	P.C. of Males Married into British and French Stocks
Dutch.....	67.2	37.65	Indian.....	6.8	4.36
German.....	41.8	21.84	Roumanian.....	6.0	9.18
Belgian.....	38.5	36.42	Czech and Slovak.....	5.6	6.52
Danish.....	29.9	38.60	Polish.....	5.6	4.80
Norwegian.....	25.5	30.82	Finnish.....	3.7	8.23
Swedish.....	24.2	36.75	Hungarian.....	2.8	2.80
Icelandic.....	14.4	31.73	Yugoslavia.....	2.5	3.93
Greek.....	13.3	27.06	Hebrew.....	1.9	2.13
Austrian, n.o.s.....	10.4	7.49	Ukrainian.....	1.9	1.38
Italian.....	9.6	18.95	Chinese.....	0.5	9.59
Russian.....	7.6	8.07	Japanese.....	0.5	0.24

n.o.s.—not otherwise specified.

¹ Data for the Negro origin have been omitted from the table because the North American Negroes have no distinctive mother tongue (other than English). Data for the Armenian, Bulgarian and Hindu origins were omitted because the number of children born to such parents in 1931 was so small (under 100) that the intermarriage rates computed thereon were considered unreliable.

The Learning of English and Related Factors.—The percentage of those not knowing English as mother tongue who had acquired it by 1931 (Col. 1, Table 61) is a very *crude* index of the keenness of the respective races in learning the English language since a number of extraneous causes contribute to the differences in the percentages. Four of the more important of these are tabulated in Table 61. As in previous analyses, the percentage North American-born is taken as a rough measure of length of residence. This factor is comparatively independent of any racial characteristic. Urban residence though to some extent a racial preference is partly a matter of economic necessity associated with the relative economic advantages in rural and urban parts at the time of and subsequent to settlement in Canada. The tendency to segregation is probably racial to a greater extent as is the percentage of the origin 10 to 20 years of age. The latter is associated with sex distribution at the time of immigration and with fertility. A multiple correlation which was worked out introducing these four as independent variables resulted in the following regression equation:—

$$X_1 = -.0432 X_2 + .1625 X_3 - .2338 X_4 + 1.2214 X_5 + 65.6707$$

where X_1 = the percentage of those not knowing English as mother tongue who had acquired it by 1931;

X_2 = percentage North American-born;

X_3 = percentage urban (21 years of age and over);

X_4 = index of segregation;

X_5 = percentage of origin 10 to 20 years of age.

A coefficient of $R = .785$ was obtained indicating that the above-mentioned factors accounted for about 62 p.c. of the differences* in proportions of those not using English as the mother tongue who had learned it. The correlation would have been appreciably higher had it not been for the inclusion of the Indians whose abnormally high percentage North American-born (100 p.c.) worked strongly against the figures for the other origins and introduced a mechanical bias in view of the limited number of origins for which data were available (twenty-three).

*Or more accurately of the squares of the differences, i.e., the variability.

RELATIVE SIGNIFICANCE OF THE FOUR VARIABLES IN THE PREDICTION

Variable	Weight
X_2 (percentage 10-20 years of age).....	100
X_3 (segregation).....	86
X_4 (percentage urban).....	56
X_1 (percentage North American-born).....	13

The proportion of the race of school age appears to be the most important single factor in explaining the differences in the extent to which the several origins acquired English outside the home. It was three times more important than the percentage North American-born in the simple correlation and over twenty times more important in the multiple, indicating that the real reason why the races with longer residence on this continent showed larger proportions acquiring English (in the simple correlation) was because they had larger proportions at school age. The school and the social contacts going with it thus appears as the most effective agency in promoting the use of English. Segregation is the major factor militating against the learning of English just as it is the greatest barrier to intermarriage generally. Urban residence, on the other hand, is favourable to the acquisition of the language of the numerically dominant stock of the region and though having less weight than either the percentage of the race of school age or the degree of segregation it is of considerable importance. Length of North American residence in so far as it does not imply large proportions of children 10-20 years of age, *i.e.*, in so far as it relates to adults only, has on the average very little association with the differing proportions who have learned to speak the English tongue outside the home. This fact is significant although the sign attaching to this particular variable both in the multiple correlation and in the prediction is obviously the result of the mechanical distortion resulting from the inclusion of the Indians in the correlation to which reference was made in the previous paragraph.

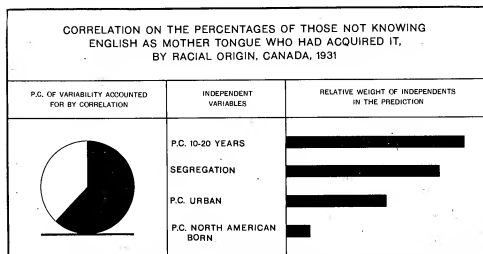


FIG. 39.—The four variables included in the correlation account for 62 p.c. of the variability in the percentages of the several ethnic groups who had acquired a speaking knowledge of English by 1931. A high percentage at school age and a large percentage urban are important factors favouring the acquisition of English on the part of non-English speaking immigrants; segregation is an important deterrent.

When the appropriate values of X_2 , X_3 , X_4 and X_1 are inserted in the prediction equation expected values of X_1 are obtained on the basis of the average relationship which it expresses.

TABLE LXV.—ACTUAL AND EXPECTED PERCENTAGES OF THOSE NOT KNOWING ENGLISH AS MOTHER TONGUE WHO HAD ACQUIRED IT, AND ACTUAL AS PERCENTAGE OF THE EXPECTED, BY RACIAL ORIGIN, CANADA, 1931

Racial Origin	Proportions Who Had Acquired English by 1931		
	Actual	Expected	Actual as P.C. of Expected
Swedish.....	98	90	109
Danish.....	98	91	108
Hebrew.....	97	90	108
Norwegian.....	98	91	108
Finnish.....	82	79	104
Icelandic.....	97	83	104
German.....	95	93	102
Italian.....	90	88	102
Yugoslavia.....	85	83	102
Belgian.....	90	87	101
Czech and Slovak.....	85	84	101
Japanese.....	78	78	100
Bulgarian.....	88	90	98
Dutch.....	88	90	98
Hungarian.....	82	84	98
Romanian.....	90	93	97
Austrian.....	91	95	96
Greek.....	93	100	93
Russian.....	86	92	93
Ukrainian.....	84	90	93
Indian.....	65	71	92
Chinese.....	70	78	90
Polish.....	88	94	90

In the case of only one North Western European origin was the actual lower than the expected, that of the Dutch. The deficiency was only 2 p.c. and this probably was attributable in large measure to the influence of the Mennonites. The Scandinavians all exceeded expectation and by relatively large amounts. The Hebrews also came in this category and the Finnish. The Germans, Italians, Yugoslavs, Belgians, Czechs and Slovaks were all slightly above expectation and there appears to be no eccentric behaviour of the variables within the correlation to unduly lower the expected in any of the above cases.

For eleven origins the actual was below the expected. These eleven included eight of the eleven South, Eastern and Central European, the Indians, Chinese and the Dutch to whom reference was made above. Of the Europeans, the figures for the Greeks, Russians, Ukrainians and Polish were the lowest. In the case of the Greeks an abnormally low index of segregation raised the expected unduly and is in a measure responsible for their position in the list. No abnormalities appear in the figures for the other three last named origins. The position of the Chinese and the Indians should really be lower than it is because of downward distortion in their expected values arising in the first case from an exceedingly small proportion of children 10-20, years of age and in the latter from a combination of very high segregation and a very low proportion urban.

As in the case of illiteracy and intermarriage generally and with the British in particular, there seems to be a real distinction between the behaviour of the North Western and the South, Eastern and Central Europeans, and more especially between the Scandinavians and the Slavs. Apart altogether from differences attributable to age distribution, segregation, percentage urban and length of North American residence, the former show greater proportions learning English than do the latter. The difference may in some small measure reflect differences in opportunity but a careful review of the possible residual factors that might be related to the problem leaves little doubt that it is largely a matter of inclination and aptitude.

CHAPTER X

ILLITERACY AND SCHOOL ATTENDANCE

Since a special monograph on illiteracy* is being prepared by Mr. M. C. MacLean, director of Census Research, only such aspects of the problem as are vitally related to a general survey of the Canadian population from the point of view of birthplace and racial origin will be considered in this chapter. Most of the material incorporated in this section and, of course, much more may be obtained in great detail in the above-mentioned report.

Definition of Illiteracy.—"Illiteracy census data are based upon the answers to two questions: (1) 'Can you read?' (2) 'Can you write?' They enumerate the person who can read and write only a few words along with the well-educated. There is no test beyond the word of the person enumerated and it is left to his common sense as to whether he considers his ability to read and write sufficient for practical purposes." Despite these drawbacks, exhaustive analysis shows that the illiteracy data are comparatively free from bias and as a measure of the proportions of the population below a minimum educational standard are eminently satisfactory.

The Special Significance of Illiteracy.—Before proceeding to examine the relation of illiteracy to racial origin and nativity brief comments should be made on the social significance of illiteracy and on the general progress in its elimination.

After an exhaustive study of the subject Mr. MacLean reaches the conclusion that mere inability to read or write in itself is not a circumstance of major significance. Rather is it the fact that the social behaviour of illiterates as a class is in many respects inferior to that of the literate elements of the population and in some respects anti-social. The forcing of the illiterates to learn to read and write would not in itself remedy the situation. Illiteracy is merely one result of a combination of circumstances and attitudes which find expression in numerous fields of social activity. The problem is one of socially elevating the illiterates as a class and involves the changing of the circumstances and attitudes which have given rise to the many undesirable class traits which tend to perpetuate themselves within the body politic.

The distinctive social tendencies of the illiterate groups may be summarized as follows:—

- (1) for more to marry, to marry younger, to marry illiterates and to separate from husband or wife, as the case may be, more frequently than obtains with the literate population;
- (2) to have larger families;
- (3) to have fewer dependents other than children;
- (4) to have a greater proportion of their children illiterate arising principally out of poorer school attendance;
- (5) to have a larger proportion of their wives and children working;
- (6) to show lower earnings per wife and child gainfully occupied;
- (7) to have heads of family belonging to occupational classes receiving the lowest wages;
- (8) to show more illegitimacy;
- (9) to show a definitely greater proportion in mental institutions;
- (10) to show a slightly greater proportion, especially of females, in corrective institutions.

In striking contradistinction to the foregoing, they show smaller proportions of persons convicted of indictable offences.

Progress in the Elimination of Illiteracy.—The following table shows the number illiterate and rates per hundred for the three censuses for which data can be given on a comparable basis. It hardly need be pointed out that illiteracy in Canada has been greatly reduced over the last forty years.

*1931 Census Monograph *Illiteracy and School Attendance*. See also 1931 Census, Vol. I, Chaps. XIII and XIV.

TABLE LXVI.—NUMBER AND PERCENTAGE ILLITERATE OF THE POPULATION¹ 10 YEARS OF AGE AND OVER, CANADA, 1891, 1921 AND 1931

Year	Population 10 Years and over	Unable to Read or Write	
		No.	P.C.
1891.....	3,588,043	494,147	13.8
1921.....	6,601,878	299,287	4.5
1931.....	8,082,324	275,088	3.4

¹ Exclusive of Indians.

"Illiteracy in Canada varies directly with *age*. It is much higher among older persons than among the young. Over 35 p.c. of the illiterates were 55 years of age and over in 1931, although only 15 p.c. of the population was over that age. More than half the illiterates were over 45 years of age." That the same applies generally to the individual origins may be seen by reference to Fig. 186 and the related textual comment in the Statistical Atlas of the Prairie Provinces which graphically depicts the illiteracy rates in 1926* for some twenty-five races by five-year age groups. The above-mentioned figure is reproduced below as Fig. 40 of the present monograph. Such being the case, it logically follows that one important influence in reducing illiteracy in the population is the gradual elimination of the highly illiterate age groups by death.

The second important agency is the *school*. "The schools of Canada are reducing illiteracy at an increasing rate. This is proved by the fact that the 10-14-year-olds are not only the least illiterate of the age groups but that their improvement over the immediately older group is greater than that of that group over the next older, the same being true of the 15-19-year-olds."

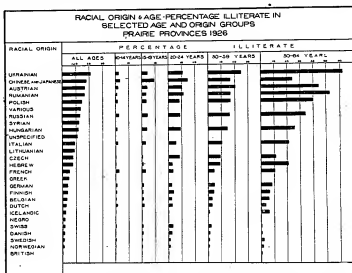


FIG. 40. While the above figure is based on data for the year 1926 and the Prairie Provinces only, the heavy concentration of illiteracy in the higher age categories is characteristic of the Dominion as a whole. It makes clear how the ageing of the population in time will virtually eliminate illiteracy among the older adults as the school and other agencies continue to reduce it to a minimum among succeeding generations of children of school age, assuming, of course, no further importation of illiterates from abroad. A comparison of the figures for the different racial origins shows where the incidence of illiteracy is heavy and where it is light.

"If the schools in the ten years between 1931 and 1941 continue to do as well as they did in the five years prior to 1931, and if there is no injection of an illiterate immigrant element in the interval, the number illiterate in Canada should decrease from 309,000 to 270,000 by 1941 and the proportion illiterate from 3.79 to 2.85—an improvement of 25 p.c. in the ten years." That is, if the schools are as successful as they have been in keeping down illiteracy in the lower age categories, age displacement will reduce general illiteracy by the aforesaid amount during the current decade. The school and the normal ageing of the population work together in reducing illiteracy. They are the principal agencies of its elimination.

* Similar tabulations are not available for 1931.

The Distribution of Illiteracy—Race and Birthplace.—"The illiteracy imported from abroad is the greatest single element in the illiteracy of Canada." The truth of this statement becomes abundantly clear from a casual examination of Table 62. Considering first the total for all races combined, one finds that illiteracy among the foreign-born males resident in Canada in 1931 was almost 2·4 times greater than among the British born and among the females it was 5·3 times greater. What is true of the population as a whole is true of every individual non-Anglo-Saxon and non-French race, the only difference being that in most cases the ratios are much greater, and in a large number of instances many times greater than those mentioned above.

It will be noted that for all but a very few races the illiteracy among the Canadian born is absolutely quite small. Where such does not obtain, analysis shows that with one or two possible exceptions it is confined to the older age groups—a carry-over from frontier days when school facilities were lacking or inadequate.

The racial localization of illiteracy may be best illustrated by ranking the various origins according to percentage illiterate in 1931.

TABLE LXVII.—PERCENTAGES ILLITERATE OF THE POPULATION 10 YEARS OF AGE AND OVER, BY RACIAL ORIGIN, ARRANGED IN ORDER OF RANK, CANADA, 1931

Racial Origin	P.C. Illiterate	Racial Origin	P.C. Illiterate
All races.....	3·73	Other European.....	7·58
Indian and Eskimo.....	37·62	Finnish.....	6·41
Chinese.....	17·40	French.....	6·18
Ukrainian.....	13·94	Unspecified.....	4·97
Other Asiatic.....	13·23	Hebrew.....	3·81
Russian.....	13·14	Belgian.....	3·40
Roumanian.....	12·63	German.....	2·57
Polish.....	11·75	Dutch.....	2·02
Japanese.....	11·20	Swedish.....	1·23
Austrian.....	10·30	Danish.....	1·16
Yugoslavia.....	10·46	Norwegian.....	1·10
Italian.....	9·14	Icelandic.....	1·10
Hungarian.....	8·80	Irish.....	1·08
Czech and Slovak.....	8·49	English.....	0·83
Various.....	8·33	Scottish.....	0·83
Negro.....	8·13	Other British.....	0·41

The first half of the table includes the coloured races and all the South, Eastern and Central European peoples. The second half includes all the North Western European origins together with the Finnish and the Hebrew. The range of the percentages in the first half is from 8·13 to 37·62 p.c.; that in the second half from 0·41 to 7·58 p.c.

On the basis of an analysis of seventy-two samples under varying age, rural-urban and geographical distribution in Canada, the conclusion is reached that on the average, illiteracy of other races was 5·65 times greater than among the Anglo-Saxons in Canada in 1931*, race being the greatest single factor in illiteracy.

The reason for the illiteracy of the foreign races is primarily, as we have seen, because of foreign birth. Immigrants of foreign races are found, as a rule, to be not only more illiterate than the Canadian born of the same race but than the average of the population in the country from which they have emigrated.

It is of interest to note in passing that *other things being equal* illiteracy at ages 15 and over is on the average 5·09 times more prevalent than in the school-age group 10-14; that rural illiteracy exceeds urban by 2·08 times and male illiteracy is 1·03 times female.

The Decline in Illiteracy among the Foreign Born of Non-British and Non-French Racial Origins, 1921-1931.—Table LXVIII shows the percentage illiterate of the immigrants of non-British and non-French stock in Canada as at the last two census dates. The percentages are arranged in order of magnitude on the basis of 1931 figures and the rank of each origin is indicated. Table 63 presents the same data for geographical and linguistic groups. When studying the figures one should keep constantly in mind that they apply only to the foreign-born portions of the several races.

*See *Illiteracy and School Attendance*, Chap. I.

A casual comparison of the 1921 and 1931 percentages reveals the remarkable progress which has been made during the decade in reducing illiteracy among the immigrant population. For the foreign born of every race but one the proportion illiterate in 1931 was smaller than in 1921. The Dutch are the one exception and illiteracy in this stock was negligible at both census dates. The reduction was most marked with races like the Ukrainians, Roumanians, Chinese, Austrians, Polish, Italians, etc., where illiteracy was very high in 1921, and where immigration during the decade was of moderate proportions. In several instances the percentage was cut in half. Even with stocks with relatively heavy recent immigration marked decreases occurred.

Among the more important factors contributing to these decreases are the school (which rapidly eliminates illiteracy among the immigrants of school age), and deaths among the earlier immigrant arrivals in the higher age categories. The principal method by which racial illiteracy is being reduced is the displacement of the foreign born of illiterate peoples by Canadian born. Social and business contacts and the application of more rigorous standards of selection to incoming immigration seem to have been of minor importance.

Though much progress has been made, immigrants of certain stocks—particularly Asiatic and South, Eastern and Central European—are still a long way from conforming to the Canadian standards of literacy. The foreign born of Slavic origin are still thirteen times, and the Latins and Greeks over ten times more illiterate than the Scandinavians as a group. Among the Germanic immigrants illiteracy though nearly three times higher than for the Scandinavians is nevertheless very moderate and presents no serious problem.

TABLE LXVIII.—PERCENTAGES ILLITERATE OF THE FOREIGN-BORN POPULATION 10 YEARS OF AGE AND OVER, FOR THE PRINCIPAL NON-BRITISH AND NON-FRENCH RACIAL ORIGINS, CANADA, 1921 AND 1931

Rank	Racial Origin	P.C. Illiterate		Rank	Racial Origin	P.C. Illiterate	
		1921	1931			1921	1931
1	Ukrainian.....	39.46	23.72	14	Hungarian.....	15.73	10.53
2	Syrian.....	22.22	19.27	15	Czech and Slovak.....	11.94	10.16
3	Russian.....	23.92	18.87	16	Greek.....	11.56	8.67
4	Roumanian.....	27.03	18.61	17	Finnish.....	12.59	8.03
5	Chinese.....	31.15	18.37	18	Hebrew.....	9.83	5.58
6	Austrian.....	35.08	16.91	19	German.....	4.90	4.48
7	Polish.....	24.46	16.48	20	Belgian.....	6.59	4.32
8	Japanese.....	20.40	15.07	21	Dutch.....	1.08	2.20
9	Various.....	13.95	14.28	22	Icelandic.....	3.16	2.15
10	Italian.....	23.68	14.22	23	Swedish.....	2.67	1.52
11	Lithuanian.....	23.74	13.90	24	Norwegian.....	1.40	1.34
12	Bulgarian.....	23.56	12.33	25	Danish.....	1.74	1.31
13	Yugoslavian.....	22.72	11.42				

School Attendance and Illiteracy.—The findings in the 1921 monograph *Illiteracy and School Attendance in Canada* were so clear and conclusive that no exhaustive analysis of the 1931 figures from this point of view seems necessary. It will suffice merely to re-direct attention to the previous summary of findings:*

"It was found that 'under present conditions in Canada there is a decided connection between the illiteracy of a community and the school attendance of children, 7 to 14 years of age.' It was also established that there was a 'less and somewhat uncertain relationship between school attendance and physical environment which caused school attendance to be necessarily poorer in rural than in adjoining urban areas.' It was made very clear, however, that the determining factor in respect to school attendance was illiteracy, and in communities where the amount of illiteracy was marked, there was also a tendency either 'to fail to provide school accommodation for the children or to fail to send them to schools where accommodation has been provided.' The Pearsonian coefficient of correlation between percentages illiterate and percentages not at school by census divisions was found to be .92 in essentially rural districts and .75 in urban areas. That such large coefficients are rather unusual in measuring correlation between social phenomena gives added significance to the relationships which they measure. 'Illiteracy and other mental, social or origin factors, kept more children out of school in 1921 than climate, thin and new settlements, etc., combined.'"

* Hurd, W. B.: *Origin, Birthplace, Nationality and Language of the Canadian People*, Chap. IX, pp. 174-175. Dominion Bureau of Statistics.

"An illiterate community thus shows a marked tendency to remain illiterate," a fact which is exceedingly important in the light of the previous conclusions of the study which identified illiteracy with the presence of many associated social characteristics radically at variance with the best interests of the nation.

School Attendance and Nativity.—The 1931 data, however, throw additional light on school attendance and nativity. "The British and foreign born show smaller percentages than the Canadian born attending school between the age limits 5-19 as a whole, but the British born have fuller attendance than either of the other nativities for the ages 5-19. At ages 10-14 both the British and foreign born attend more fully than the Canadian born. It is at ages 15-19 that the Canadian-born attendance is superior, *i.e.*, the Canadian born stay longer at school while the British born begin school younger, which may be one reason why they leave school earlier."

In the matter of *regularity* of attendance as measured by the average number of months at school during the year, the experience of 1930-31 indicates that the British born are the most regular and the foreign born the least. The figures are as follows:—

Nativity	Average Months at School during School Year 1930-31
British born.....	7.83
Canadian born.....	7.77
Foreign born.....	7.70

The figures are based of course on actual enrolment.

One further point of interest is that the British born, in spite of the fact that they dropped out of school earlier than the Canadian born, apparently put in as much time at school throughout their school career owing to an earlier start and more regular attendance while at school. The foreign born seem to fall short of the Canadian and British figure, on the average, by about four months.

The 1930-31 analysis confirmed the earlier finding that "except in the case of extreme latitudes the physical environment exerts a negligible influence upon the percentage attending school" or on the differences in the percentages attending as between the broad nativity groups. In other words, it is only in extreme cases that children fail to turn up at school at some time during the year because of lack of schools, climate, distance, etc. The conclusion, therefore, seems to be that non-attendance is almost entirely a social phenomenon. It is a function of economic status and home environment. The peoples which show the social characteristics which were enumerated at the beginning of this chapter as being associated with illiteracy show up worst in the matter of school attendance on the part of their offspring of school age. The association between those social characteristics and school attendance is found to be quite as close as with illiteracy. Both are largely functions of nativity and race.*

*For an exhaustive demonstration of these associations see Part II of the 1931 Census Monograph, *Illiteracy and School Attendance*.

CHAPTER XI

CRIME

Nativity and Convictions for Indictable Offences.—Indictable offences include serious breaches of the law. Convictions in Canada for such offences rose from 16,258 in 1921 to 31,542 in 1931. In the latter year, 3,129 of such convictions resulted in penitentiary sentences, the number in Canadian penitentiaries as on June 1, 1931 being 3,748. In addition to indictable offences there are misdemeanours of juveniles with which the juvenile courts deal and for which reformatory sentences are frequently given. The total convictions of juveniles on both major and minor charges number between 7,000 and 8,000 yearly and the population of reformatories is usually about 4,000. The great majority of illegal acts, however, are committed by adults and are of a minor nature, coming in the "non-indictable" class. They are dealt with by police magistrates and justices of the peace, and the number of summary convictions handed down each year now exceeds 300,000, which is many times greater than the number of other classes of convictions.

A study of the different nativity and "origin" groups from the point of view of respect for law is, of necessity, confined to the section of the population convicted of indictable offences and to the inmates of reformatories* and penitentiaries. Data as to birthplace and origin are not available for the large group of adults summarily convicted in police courts nor for juvenile delinquents who escape a reformatory sentence. The birthplace of those convicted of indictable offences, however, is recorded, and a complete analysis of census data dealing with the reformatory and penitentiary population has been made. Such data include only the more serious offenders both among juveniles and adults, but though such offenders are much fewer than adults convicted of minor infringements of the law, they constitute a much more satisfactory basis for the study of criminal tendencies as exhibited by the various sections of a population.

Reference has already been made to the importance of age and sex distribution as factors in explaining differences in social behaviour. Such factors are especially important in comparisons between groups of a population in respect of criminality. As will be shown in the analysis of penitentiary population, crime is much more frequent among males than females and occurs most frequently among young men. Consequently, when a section of the population is characterized by an abnormally large proportion of males below the age of 30, a higher crime rate is to be expected. The significance of this fact in connection with immigration has been suggested in a previous chapter. Other things being equal, the normal expectation is for a larger proportion of criminals among immigrants, and especially among recent immigrants, because a migrating population ordinarily includes a disproportionately large number of males in the prime of life. Immigration, thus, may tend to raise the crime rate in a country, merely because of age and sex distribution favourable to crime.

In this connection, attention is again called to the fact that, other things being equal, the most desirable immigration is that in which the sexes are most nearly equal and the largest proportion takes up permanent residence in this country; the least desirable being that which is characterized by a large floating surplus of young unattached men who spend a few years here and then return to their native land or go to some other part of the world. Table 19 shows the countries which have sent to Canada the largest proportions of males, and in the discussion on the extent and speed of naturalization certain inferences were made as to the differing proportions of immigrants from specified countries who contemplate permanent residence in Canada. Attention is again directed to those chapters, for they are intimately related to the analysis which is to follow. For example, if it is shown that apart from peculiarities of sex and age distribution, immigrants of some nationalities have excessively high crime rates, the importance of such a finding is greatly increased if at the same time such immigrants are predominantly males, with an age distribution kept unduly favourable to crime by the constant withdrawal of the older men from the country and the continuous influx of younger men from the homeland.

*The term "reformatory" as here used includes industrial training schools as well as corrective and reformative institutions.

While it is important to know in which sections of the population crime is most common, the crude crime rates frequently have been taken as an index of differences in criminality deriving from differences in original nature and early environment and have been used to support the thesis that certain nationalities and stocks are more predisposed to disobey the law than are others. If no account is taken of age and sex differences, such comparisons may be extremely unfair and misleading. Our first problem, therefore, will be to examine the data on indictable offences and determine how far considerations of age and sex account for the higher rate obtaining among the foreign born and how far it may fairly be attributed to birthplace, racial origin and other factors.

Table LXIX shows the numbers 16 years of age and over convicted of indictable offences in Canada by sex and specified age groups. The figures are for the year 1931. The numbers are expressed as rates per 100,000 of the population of Canada in the corresponding age and sex groups for the population of the same year.

The table emphasizes two facts: first, that convictions for indictable offences among men are many times more frequent than among women; and second, that in both sexes they are most common under 40 years of age. These facts are of common knowledge, but the magnitude of the differences is sometimes not appreciated.

TABLE LXIX.—CONVICTIONS FOR INDICTABLE OFFENCES AND RATES PER 100,000 POPULATION, BY AGE GROUPS AND SEX, CANADA, 1931

Age Group		Convictions	Population	Rates per 100,000 Population
16 and over.....	M.	28,935	3,609,878	802
	F.	2,607	3,276,771	80
16-20.....	M.	6,840	516,673	1,324
	F.	426	507,156	84
21-39.....	M.	14,235	1,506,148	945
	F.	1,575	1,399,228	113
40 and over.....	M.	4,429	1,587,057	279
	F.	442	1,370,387	32
Not stated.....	M.	3,431	-	-
	F.	164	-	-

The number of convictions in 1931, classified by broad nativity groups, is given in Table LXX, together with the rates per 100,000 population of each group. If the rate for the Canadian born be taken as 100 and those for the "Other British" and foreign born be expressed as percentages of the Canadian rate, the index in the table is obtained:—

TABLE LXX.—CONVICTIONS FOR INDICTABLE OFFENCES AND RATES PER 100,000 POPULATION, BY BROAD NATIVITY GROUPS, CANADA, 1931

Nativity	Convictions	Rates per 100,000 Population	Index
Total.....	31,542	304	-
Canadian born.....	18,287	226	100
Other British born.....	3,306	279	123
Foreign born.....	4,798	426	188
Not stated.....	5,141	-	-

It is seen that the rate for the British immigrants is larger by a quarter than that for the Canadian born and the proportion convicted among those of foreign birth is nearly twice greater. The problem is to determine how much of these differences is attributable to sex and age distribution especially favourable to crime.

The indirect method was made use of in the absence of specific rates for the several nationalities by age and sex. Specific rates for the total population were applied to the age distributions for the males and females of the broad nativity groups and expected rates computed on the basis of the uniform crime rates for all Canada. These were expressed as an index with the expected for the Canadian born as 100. The results are shown in Table LXXI.

TABLE LXXI.—COMPARATIVE RATES OF CONVICTIONS FOR INDICTABLE OFFENCES AMONG THE CANADIAN-, BRITISH- AND FOREIGN-BORN POPULATION, WITH THE BIAS CAUSED BY DIFFERING AGE AND SEX DISTRIBUTIONS REMOVED, CANADA, 1931

(Rate for the Canadian-born population=100 in each case)

Nativity	(1) Expected Rates of Convictions on the Basis of Uniform Criminality in Each Group and the Existing Age and Sex Distribution	(2) Actual Rates of Convictions in 1931	(3) Ratio of Actual to Expected Convictions Indicating Real Difference in Criminality Apart from Age and Sex Distribution (Col. 2 ÷ Col. 1)
Canadian born.....	100	100	100
Other British born.....	83	123	148
Foreign born.....	102	188	184

On the basis of the number of convictions for indictable offences per 100,000 of each age and sex group as shown in Table LXIX, the "other" British born would have shown a rate 17 p.c. smaller than the Canadian born and the foreign born a rate 2 p.c. larger, merely because of larger proportions of young men in the prime of life and smaller percentages of females. The actual rate for the "other" British exceeded that for the Canadian born by 23 p.c., despite a 17 p.c. less favourable age and sex distribution from the standpoint of liability to convictions for indictable offences. Likewise the actual rate for the foreign born exceeded that for the Canadian born by 88 p.c. in the face of only a 2 p.c. more favourable age and sex distribution. The conclusion obviously is that, in so far as convictions for indictable offences in 1931 are an index of criminality, disregard for the law was 48 p.c. more prevalent among the British born and 84 p.c. more prevalent among the foreign born than with the Canadian born after all due allowance is made for differences in the extraneous circumstances of age and sex. The figures are, of course, only approximates and the possible error is larger than one would have wished, because of the number of convictions with nativity not reported (16.3 p.c.) and the absence of a sufficiently detailed age classification for the statistics on indictable offences. Despite these deficiencies in the data, the fact remains that the incidence of convictions for indictable offences was 23 p.c. heavier for the British born and 88 p.c. heavier for the foreign born than for the native Canadians and when allowance is made for the less favourable age and sex distribution on the part of the immigrant groups the British born have a record of indictable offences about half again as bad as the Canadian born, while that of the foreign born is materially worse.

Though the uncorrected rates for immigrants and Canadian born were lower in 1931 than in 1921, when adjustments are made for age and sex the disparity was greater in the year of the last census, the notable increase being that for the British born.

In conclusion it is of importance that convictions for indictable offences have been on the increase generally over the last decade. Their number rose from 16,258 in 1921 to 31,542 in 1931, an increase of approximately 94 p.c. as against a growth of only 18 p.c. in the population as a whole. Much of this increase is associated with the depression as will be seen from the following totals:—

TABLE LXXII.—ANNUAL NUMBER OF CONVICTIONS FOR INDICTABLE OFFENCES, CANADA, 1921-1930

Year	Convictions	Year	Convictions
1921.....	16,258	1926.....	17,448
1922.....	15,720	1927.....	18,835
1923.....	15,188	1928.....	21,720
1924.....	16,258	1929.....	24,097
1925.....	17,219	1930.....	28,457

As a matter of fact almost half of it occurred in the years 1930 and 1931.

The increase has been confined largely to males and it was especially heavy at ages under 40. A comparison of the 1921 and 1931 rates gives a precise idea of its magnitude.

TABLE LXXIII.—CONVICTIONS FOR INDICTABLE OFFENCES PER 100,000 POPULATION, BY BROAD AGE GROUPS AND SEX, WITH PERCENTAGE INCREASE IN THE DECADE, CANADA, 1921-1931

Age Group	Convictions per 100,000 Population					
	Males			Females		
	1921	1931	P.C. Increase	1921	1931	P.C. Increase
16-20.....	719	1,324	84	70	84	20
21-39.....	561	945	89	85	113	31
40 and over.....	180	279	55	35	32	- 9

(-) signifies decrease.

The comparison is not vitiated by any material change in the proportions for whom age was not stated. Just how far these increases were the aftermath of lack of parental discipline during and personal maladjustments following the War and how far they are attributable to the depression conditions is impossible to say. It is reasonably certain that both were important. The behaviour of the figures suggests that lack of employment and other circumstances arising out of the economic debacle of the early thirties were prime causes of the disproportionate growth of serious crime among male adults generally.

Origins and Nativity of Juvenile Reformatory Population.—Any conclusions from Canadian reformatory statistics as to the relation of origin and nativity to juvenile delinquency must be arrived at with great caution and should be regarded as provisional and tentative. The more important reasons for this statement are as follows:—

(1) The total juvenile reformatory population in 1931 was only 2,353 and when this total is broken down into origin, nativity and sex cross-classifications the numbers are, in most cases, too small to inspire great confidence as a basis of statistical deduction.

(2) For 311 or 13 p.c. of the above total no report was made as to birthplace and for 299 or 12 p.c. data are lacking on racial origin.

(3) The geographical distribution of reformatories and training and corrective institutions for juveniles suggests that certain provinces are much more amply equipped, relative to the size of their populations, than are others and that the proportion of juveniles in such institutions is a function not only of juvenile delinquency but of the number and capacity of the local institutions. When the origin and nativity structure of the population varies radically between provinces as it does in Canada one can readily see how the matter of unequal distribution of physical equipment would throw the rates out. The following table illustrates the point.

TABLE LXXIV.—PERCENTAGE DISTRIBUTION OF TOTAL AND JUVENILE REFORMATORY POPULATION, CANADA AND PROVINCES, 1931

Province	Percentage Distribution of	
	Juvenile Reformatory Population	Total Population
CANADA.....	100.0	100.0
Prince Edward Island.....	-	0.9
Nova Scotia.....	10.6	4.9
New Brunswick.....	2.0	3.9
Quebec.....	27.8	27.7
Ontario.....	40.5	33.1
Manitoba.....	5.5	6.8
Saskatchewan.....	2.0	8.9
Alberta.....	1.3	7.1
British Columbia.....	9.2	6.7

In Nova Scotia the number of juveniles in corrective and reformatory institutions is over twice as large as one would expect from the size of its total population; in Ontario the proportion is more than a fifth larger and in British Columbia almost two-fifths larger. In New Brunswick, Saskatchewan and Alberta, on the other hand, the proportions are very much smaller than expectations—in the latter province the rate is less than one-fifth the expected. No reasonable

person could believe that children were six to seven times as bad in Ontario and British Columbia as in Alberta and five times as bad in Quebec. The difference in the reformatory rates in large measure is a matter of the presence or absence of accommodation.

Despite these and other drawbacks a brief analysis of the juvenile reformatory population is included in this chapter, but the reader is cautioned about the tentative character of even such conclusions as may be drawn.

Table LXXV cross-classifies the data by sex and broad nativity groups. It will be seen that the ratio of males to females in reformatories and allied institutions is almost three to one. The proportions differ appreciably as between the different provinces, but no conclusion is warranted from this variation as to differences in the relative behaviour of males and females in the several nativities for two reasons: first, the proportion of males for whom reports on nativity were not made was nine times greater than that for the females and second, the relative adequacy of accommodation for female delinquents differs radically as between the several sections of Canada, the institutional provision being relatively more adequate where the Canadian born are the most numerous.

TABLE LXXV.—JUVENILE REFORMATORY POPULATION UNDER 18 YEARS OF AGE, BY NATIVITY AND SEX, WITH PERCENTAGE EACH SEX FORMS OF TOTAL AND RATES PER 100,000 POPULATION 10-20 YEARS OF AGE, CANADA, 1931

Item	Total	Canadian-Born	British-Born	Foreign-Born	Not Stated
Reformatory population.....	2,353	1,875	81	80	311
Males.....	1,715	1,289	65	64	297
Females.....	638	586	16	22	14
Males as percentage of total.....	73	69	80	74	95
Females as percentage of total.....	27	31	20	26	5
Population 10-20 years.....	2,305,031	2,105,629	97,897	96,506	-
Number in reformatories per 100,000 population 10-20 years	102	89	83	89	-

¹ Includes about 15 whose birthplace was not stated.

TABLE LXXVI.—NATIVITY OF PARENTS OF THE CANADIAN-BORN JUVENILE REFORMATORY POPULATION UNDER 18 YEARS OF AGE AND RATES PER 100,000 POPULATION 10-20 YEARS OF AGE, CANADA, 1931

Item	Total Canadian- Born	Canadian-Born Having							Parentage Not Stated
		Both Parents			Mixed Parentage				
		Canadian- Born	British- Born	Foreign- Born	Father Can- adian, Mother Foreign	Father Foreign, Mother Canadian	One Parent British, Other Foreign	One Parent Canadian, Other British	
Reformatory population	1,875	993	225	213	33	57	29	164	161
Population 10-20 years....	2,108,629	1,329,811	225,748	288,547	54,557	52,254	24,291	132,859	2,562
Number in reforma- tories per 100,000 popu- lation 10-20 years.....	89	75	101	74	60	100	119	123	-

In 1931 there were 102 juveniles (both sexes) in reformatories per 100,000 population 10-20 as against 130 in 1921 indicating an appreciable decline over the decade. As was pointed out in the former monograph, the high 1921 figure was, no doubt, associated with the lack of paternal discipline owing to the absence of adult males during the War. One is forced to be sceptical as to the significance of the composite rates for the several nativities for reasons already discussed. No great variation appears in the 1931 figures. There were 89 for the Canadian and foreign born per 100,000 both sexes between 10 and 20 years of age, and 83 for the British born, despite their predominantly urban residence. Corresponding rates in 1921 were, Canadian born 113, British born 215 and foreign born 213. The relative improvement over the decade seems to have been greatest for British and foreign born.

From Table LXXVI it would appear that the children of Canadian-born parents and the children of foreign-born parents are about on a par as regards liability to reformatory commitment. Those of British-born parentage apparently have an appreciably worse record despite the fact

that their rate is less than half that of 1921. Urban residence may have something to do with it. The drop in the figures for children of both the Canadian- and British-born parents was to be expected with the resumption of paternal discipline in the post-War decade. The unexpectedly low rate for the children of foreign-born parents was commented upon in the previous analysis. It is significant that an equally low rate should appear in the 1931 figures. The acceptance of these figures at their face value, however, now seems to have been a mistake. The experience of the United States and the findings of the present study of indictable offences and penitentiary inmates makes it very difficult to believe that these low rates for the children of foreign-born parents are indicative of better behaviour. They are much more likely the result of the fact that disproportionately large numbers of such children are found in the provinces where reformatory accommodation is least adequate.

As in 1921 the lowest rates among the mixed parentage groups occurred where the father was Canadian-born and the mother foreign and the next lowest was where the father was foreign and the mother Canadian. In both years rates where one parent was British and one foreign and one Canadian and one British were appreciably higher. The big drop over the decade seems to have occurred with the children of mixed British and foreign parentage, but the absolute numbers are so small as compared with the number whose parentage was unspecified that too much dependence should not be placed on rates derived from any but the larger figures in the table.

Table LXXVII distributes the juvenile reformatory population by groups of origins:—

TABLE LXXVII.—NUMBERS IN REFORMATORIES AND RATES PER 100,000 POPULATION 10-20 YEARS OF AGE, BY GEOGRAPHICAL AND LINGUISTIC GROUPING OF RACIAL ORIGINS, CANADA, 1931

Racial Origin Group	Number	Rates per 100,000
Total.....	2,353	102
North Western European.....	74	38
South, Eastern and Central European.....	213	114
Scandinavian.....	12	25
Germanic.....	62	42
French.....	543	76
Slavic.....	133	99
British.....	1,126	100
Latin and Greek.....	69	205

In reading the above table one is again reminded that for 299 or 12 p.c. of the reformatory population the racial origin was not specified. Nevertheless, a number of conclusions seem warranted. Declines have been general for practically every origin group. Commitments are still several times heavier for the South, Eastern and Central Europeans than for the North Western Europeans. The figures for the Scandinavian and Germanic origins are low, those for the French, Slavic and British moderate to high and that for the Latin and Greek very high. Reference to Chapter V will show that the above order follows precisely the order of the degree of urbanization, but it is not suggested that urbanization itself is enough to account for the very considerable differences in the rates.

Rates for individual foreign races having 19 or more in reformatories were as follows:—

TABLE LXXVIII.—NUMBERS IN REFORMATORIES AND RATES PER 100,000 POPULATION 10-20 YEARS OF AGE, FOR INDIVIDUAL FOREIGN RACIAL ORIGINS HAVING 19 OR MORE INMATES, CANADA, 1931

Racial Origin	Number	Rates per 100,000 Population 10-20 Years
Negro.....	27	644
Russian.....	43	196
Italian.....	47	190
Austrian.....	19	156
Polish.....	45	130
Indian.....	32	112
German.....	55	51
Ukrainian.....	21	34

Here again urbanization appears as an important factor (except in the case of the North American Indians) yet that it is by no means the sole determinant is seen from the extreme figure for the Negroes and the relatively high figures for the Russians and Austrians, despite only moderately large percentages in urban centres.

Nativity is also associated with delinquency but unfortunately the 1931 Census tabulations do not permit the computation of separate rates for the Canadian, British and foreign born of the individual origins. In 1921 it was found that for all but one of the major racial groups the rates among the Canadian born were materially lower than for those born in foreign and other British countries. Such data as are available in 1931 suggest that the same type of difference persists but that it was very much less marked in 1931 than in 1921.

Further analysis of the 1931 reformatory statistics hardly seems justifiable. Age, sex, nativity, race and urban residence are all related to the proportions in Canadian reformatories and underlying them all is variation in the adequacy of institutional accommodation in the different sections of the Dominion. This latter difficulty does not apply to the penitentiary data which are discussed in the next section. In view of the striking similarity of many of the more important distributions for the reformatory and penitentiary populations the ensuing discussion may be related with advantage to the problem of juvenile delinquency. The juvenile delinquent is all too frequently the parent of the penitentiary inmate of later years and the conditions favourable to the production of the one can not radically differ from those which are favourable to the production of the other.

PENITENTIARY POPULATION

Introduction.—Those committed to penitentiaries include only such as have been convicted of serious offences against the criminal code. Breaches of the law might be of considerable frequency in a community and the proportions in penitentiaries be small, because members of that community very rarely committed crimes of a serious nature. Further, certain people may be clever enough to work within the letter of the law, yet pursue predatory occupations which are as criminal in intent and as serious in their effects on society as those so-called major offences which result in the commitment of others to penitentiaries. Consequently, penitentiary statistics do not measure with complete accuracy differences in criminality as between the various sections of a population. Besides, those in penitentiaries at a given time include many who have been there for ten, fifteen, twenty or more years, so that changes in the composition of that group do not reflect changing tendencies in crime as quickly as data covering the actual admissions in various periods. Yet, while the composition of the penitentiary population at any given date is not an entirely satisfactory index of criminal propensity among the various sections of our population and changes in its composition are not precisely coincident with changing trends the census of penitentiary population nevertheless throws much light on the tendency to crime,

On June 1, 1931, there were 3,748 prisoners distributed as follows in the seven penitentiaries of Canada:—

TABLE LXXIX.—PENITENTIARY POPULATION, BY PLACE OF CONFINEMENT
AND SEX, CANADA, 1931

Penitentiary	Inmates	
	Males	Females
Total.....	3,704	44
Dorchester, N.B.	403	-
St. Vincent de Paul, Que.....	904	-
Kingston, Ont.	765	44
Stony Mountain, Man.....	439	-
Prince Albert, Sask.....	589	-
New Westminster, B.C.....	406	-
Collins' Bay, Ont.....	198	-

It is with the population as listed above at the date of the last census that this section of the study deals. Although the number is not great, at least it is sufficiently large to warrant such broad generalizations as are made below, and where very small numbers occur in the analysis, the actual figures are inserted as well as the rates per 100,000, so that the size of the sample on

which the conclusions are based may be known to the reader, and due allowances made. The rates shown in the following tables are correct to the first whole number throughout. While they have been computed to the second decimal place in the work tables, such detail is not warranted by the size of the population under review, and its inclusion would merely make the tables more difficult to read.

Age and Sex Distribution of the Penitentiary Population.—Table LXXX shows the numbers in penitentiaries in Canada per 100,000 for each sex and quinquennial age group. Two facts are clearly established by that table. First, penitentiary sentences are many times more prevalent among men than women. Consequently, other things being equal, where there is a large surplus of males there will tend to be a very much higher penitentiary rate. If one applies that test to immigration, it is apparent that a country which sends a great surplus of males to Canada would be sending proportionately more criminals than were it to send men and women in more equal numbers. It follows, then, that from the standpoint of major (as well as minor) offences the most desirable immigration is that in which the numbers of the sexes are most nearly equal and the least desirable is that in which the excess of males is greatest. Of course other factors besides sex distribution are involved, such as origin, birthplace, rural and urban distribution, etc. Neglecting such other factors, however, the above generalization is warranted by the figures under review.

The second point to note is that the most criminal age group, as indicated by the penitentiary population, is 20-24 years. The group 25-29 years, comes a close second. It must be recalled, however, that the age distribution of penitentiary population does not refer to the age of admission, and consequently does not accurately reflect the age at which the crimes were committed. On the average the date of committing the various crimes for which the prisoners under review were committed was somewhat prior to the date of the census, and in so far as the rates are used as an index of criminality at the different ages, allowances must be made for a "lag" in the age groups of perhaps a year and a half to two years.

However, the data are sufficiently accurate to warrant the statement that the ages for which the crime rate is highest are in the twenties—especially the early twenties—and the corollary follows that in those sections of the population where large numbers are concentrated at those ages, proportionately more crime of a serious nature is to be expected.

Summarizing, then, the examination of penitentiary population shows clearly that a large surplus of males and a marked concentration of ages in the twenties and early thirties makes for greater criminality in a population, and from the point of view of immigration, where the inflow consists largely of males in the prime of life, the crime rate normally will be exceptionally high.

TABLE LXXX.—NUMBERS IN PENITENTIARIES AND RATES PER 100,000 POPULATION OF EACH SEX, BY QUINQUENNIAL AGE GROUPS AND SEX, CANADA, 1931

Sex	Age Group										
	Total	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60 and over
Number											
Total.....	3,748	309	952	758	565	363	294	187	126	81	90
Males.....	3,704	305	943	755	562	355	289	181	125	77	95
Females.....	44	4	9	3	3	8	5	6	1	4	1
Rate per 100,000											
Total.....	36	30	105	96	80	53	45	32	20	22	11
Males.....	69	58	203	184	153	99	83	56	47	39	21
Females.....	1	1	2	1	1	3	2	2	1	2	1

¹Less than 0.5 per 100,000.

Conjugal Condition of the Penitentiary Population.—Only a few remarks are necessary regarding Table LXXXI. The rates shown indicate that higher proportions of divorced, widowed and single males were in the penitentiaries in 1931 than of married men. Not only is that true for the total male population of penitentiaries at all ages, but it is true also for each age group.

Where a population shows an unusually large proportion of young unmarried men or of widowers, the crime rate tends to be high. The actual numbers in the case of women are hardly large enough to warrant any definite generalization, although it is interesting that in the data for 1931 the widows showed the highest proportions in penitentiaries and the single women the lowest. The findings in this and the preceding section are precisely similar to those of 1921. In practically all cases, however, the rates were considerably higher at the later census date.

TABLE LXXXI.—NUMBERS IN PENITENTIARIES AND RATES PER 100,000 POPULATION, BY CONJUGAL CONDITION AND SEX, CANADA, 1931

Conjugal Condition	Number			Rates per 100,000 Population		
	Both Sexes	Male	Female	Both Sexes	Male	Female
Total.....	3,748	3,704	44	36	69	1
Single.....	2,357	2,350	7	40	74	1
Married.....	1,190	1,163	27	30	17	1
Widowed.....	156	146	10	36	18	4
Divorced.....	29	29	1	390	710	1
Not stated.....	16	16	1	1	1	1

1 Less than 0.5 per 100,000.

Birthplace of the Penitentiary Population.—Table LXXXII classifies the penitentiary population by quinquennial age and broad nativity groups. Rates for females by birthplace are unreliable because of the smallness of the absolute numbers and consequently are not shown. Figures for "both sexes" and more particularly for the males are significant.

In the first place, one notices that of the total population 15 years of age and over 36 per 100,000 were in penitentiaries in Canada in 1931. For the Canadian born the rate was as low as 32 per 100,000; for the British born it was 38; but for the foreign born it was 65. This means that with the age and sex distribution obtaining at the date of the census, the foreign born showed a proportion in penitentiaries nearly twice that of the British born and over twice that of the Canadian born. Of course, the sex and age distribution of the foreign born was especially favourable to crime, and the rates quoted must not be taken to mean that immigrants are inherently more criminal in their behaviour than the Canadian and British born by the proportions indicated.

TABLE LXXXII.—NUMBERS IN PENITENTIARIES PER 100,000 POPULATION, BY NATIVITY, QUINQUENNIAL AGE GROUPS AND SEX, CANADA, 1931

Nativity	Age Group										
	All Ages	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60 and over
Both sexes.....	36	30	105	96	80	53	46	32	26	22	11
Canadian born.....	32	29	103	101	84	51	44	28	22	16	7
British born.....	38	36	115	89	55	32	27	19	15	23	12
Foreign born.....	65	49	108	85	85	78	69	62	54	50	32
Males.....	69	58	203	184	153	99	83	56	47	39	21
Canadian born.....	62	56	204	203	168	98	56	52	44	30	15
British born.....	70	62	208	164	114	64	49	33	27	37	22
Foreign born.....	108	89	199	140	139	128	109	94	82	76	54

Turning now to the lower section of Table LXXXII, which gives the proportions for males alone, it is seen that for all Canada, 69 out of each 100,000 males 15 years and over were in penitentiaries. The rate for Canadian-born males was 62, for the British-born 70, and for the foreign-born 108. Thus, when the male penitentiary population is related to the total male population 15 years of age and over for each nativity group, it is found that the foreign-born males show 1.5 times the proportion in penitentiaries shown by the British-born and 1.8 times that for the Canadian-born. The latter are much more significant ratios than those noted in the preceding paragraph from the point of view of criminal propensity under the peculiar economic and social environments in which the different nationalities find themselves in Canada, but even the present comparison is vitiated by differences in age distribution.

The influence of the latter may be eliminated by comparing the rates for males of corresponding age categories, and a glance at the table reveals the curious fact that while the rates for the foreign born, though higher for persons under 20 and over 34, are actually lower than the corre-

sponding rates for the Canadian born at the very important ages between 20 and 34. In 1921, the proportion of foreign-born males in penitentiaries was very much greater than that of the Canadian-born at every age. Indeed, between 15 and 60, there were only four quinquennial age groups where the rates for the foreign born were not more than twice that for the Canadian born. In 1931, there was only one case where it was as much as twice that for the Canadian born and for the three numerically most important age groups the rates were actually lower than those for the native Canadians.

The decade has thus witnessed a rather remarkable change, the nature of which may best be understood by comparison of the specific rates for the several nationalities at the two census dates.* Specific rates for the Canadian born were materially higher in 1931 than in 1921 at all ages between 20 and 55, and for the British at ages between 20 and 40. With the foreign born the rates were lower for seven of the ten age categories shown in the table and for the early adult ages they were materially lower. The reasons for the change in behaviour of the several nativity groups with respect to penitentiary commitments is largely a matter of conjecture. The increase for the British and Canadian born is, doubtless, in some measure, related to the increase in convictions for indictable offences associated with the financial debacle of 1929. To this should be added, in the case of the Canadian born, the abnormal increase in the number of Canadian-born sons of immigrants in the early years of adult manhood as a natural consequence of the exceedingly heavy immigration during the years preceding the War, and as well the circumstance that young adults of Canadian-born parentage were the children of the War period who suffered from lack of paternal control. The latter would also apply to the British born. On the whole, it seems safe to regard the drastic rise in the rates for the native Canadians in large measure as the aftermath of the War and heavy pre-War immigration. Further reference will be made to this point as well as to some possible causes of the concomitant decline in the rates for the foreign born. The net result of these changes seems to have been that generally speaking the British born show somewhat smaller percentages in penitentiaries, age for age, than do the Canadian born and the same is true of the foreign born for the important age groups between 20 and 34. These findings at first glance seem hardly consonant with the evidence in the earlier section on indictable offences. The explanation appears to be that while relatively larger numbers of the British and foreign born than of the Canadian born are convicted of indictable offences, fewer of the actual convictions result in penitentiary sentences, the implication being that on the average the offences are of a somewhat less serious character.

The fact remains, however, that the actual problem of law enforcement is still substantially greater in proportion to their numbers among the foreign born than among the British or Canadian born at least in so far as commitments for major offences may be taken as an index.

* For 1921 rates see 1921 Monograph *Origin, Birthplace, Nationality and Language of the Canadian People*, p. 180.

TABLE LXXXIII.—FOREIGN-BORN MALE PENITENTIARY POPULATION 21 YEARS OF AGE AND OVER, BY BIRTHPLACE, CANADA, 1921 AND 1931

Birthplace	Males 21 Years and over in Penitentiaries		Birthplace	Males 21 Years and over in Penitentiaries	
	1921	1931		1921	1931
All foreign countries.....	598	685	Europe—Con.		
Europe.....	352	389	Poland ¹	26	77
Austria.....	83	47	Roumania.....	24	22
Belgium.....	6	5	Russia.....	69	78
Bulgaria.....	9	4	Sweden.....	6	6
Czechoslovakia.....	1	3	Switzerland.....	4	9
Denmark.....	6	10	Ukraine.....	2	2
Finland.....	7	12	Yugoslavia.....	0	2
France.....	7	13	Asia.....	23	92
Germany.....	6	17	China.....	19	75
Greece.....	8	1	Japan.....	3	1
Holland.....	3	4	Syria.....	0	1
Hungary.....	4	7	Turkey.....	1	2
Iceland.....	0	1	United States.....	213	232
Italy.....	72	51	Other countries.....	10	7
Norway.....	4	9			

¹ Including Galicia.

TABLE LXXXIV.—FOREIGN-BORN MALE PENITENTIARY POPULATION AND RATES PER 100,000 MALE POPULATION 21 YEARS OF AGE AND OVER, BY SPECIFIED GROUPING OF COUNTRIES OF BIRTH, CANADA, 1921 AND 1931

Group of Countries of Birth	Males 21 Years and over in Penitentiaries		Rates per 100,000 Males	
	1921	1931	1921	1931
All foreign countries.....	598	685	142	116
Europe.....	352	380	146	98
North Western Europe.....	42	74	69	70
South, Eastern and Central Europe.....	310	306	185	107
Asia.....	23	76	53	151
United States.....	213	222	159	160
Scandinavian.....	16	26	42	45
Germanic.....	15	26	68	73
Latin and Greek ¹	104	75	290	125
Slavic.....	195	212	101	105

¹ France not included.

Table LXXXIII shows the number in penitentiaries of the foreign-born male population aged 21 years and over in Canada for 1921 and 1931. The table deals only with male immigrants. The countries of birth have been grouped in Table LXXXIV, where the number in penitentiaries and rates per 100,000 are presented in parallel columns. A few of the significant facts are brought out by comparing Tables LXXXIII and LXXXIV.

First, the number of males from both Russia and Poland in Canadian penitentiaries exceeded the number from all countries of North Western Continental Europe combined. The total for the Chinese was only fractionally smaller. Second, Italy and Austria each accounted for almost twice the number attributable to either the Scandinavian or Germanic group. Table LXXXIV shows that there were four times as many South, Eastern and Central European males serving heavy sentences in Canadian penal institutions as North Western Europeans. In fact, over 80 p.c. of the European-born males in Canadian penitentiaries on June 1, 1931 came from the South, Eastern or Central parts of the continent; Slavic countries contributed 56 p.c. of the total European, Latin and Greek 20 p.c., Scandinavian and Germanic countries each 7 p.c. Passing to the United States, it is seen that that country of birth is responsible for a slightly larger number of male penitentiary population than all Slavic countries combined and three times more than all North Western European countries. Indeed, United States-born males contributed almost one-third of all foreign-born male inmates of Canadian penitentiaries. It will be shown below that the high rate for the United States born is not attributable to the *bona fide* settler. The close proximity of the United States and the ease of crossing the international boundary makes Canada peculiarly exposed to visits of professional criminals from that country.

So much for the absolute contributions of the principal nativity groups to the male penitentiary population; our next task is to examine the rates. The United States born with 160 per 100,000 adult males in Canadian penitentiaries in 1931, showed a higher rate than any other group of foreign nativities. Italy, Austria and China were the only individual countries of birth with dependable rates in excess of the United States figure. The Asiatic with 151 per 100,000 ranked second among the broad nativity groups, a position for which the Chinese were largely responsible. Latin and Greek countries had a rate of 125 and stood third; Slavic countries with 105 were fourth. The rates for the North Western Europeans were much lower than those quoted above, that for the Germanic group being 73 and for the Scandinavian only 45. Obviously important differences in the propensity for getting into Canadian penitentiaries still exist as between the male immigrants from various foreign countries, although the differences are by no means as marked as in 1921. The latter circumstance is explained when one compares the 1921 and 1931 rates. During the decade, the rate for all foreign-born males fell from 142 to 116 per 100,000 and for all European-born from 146 to 96, both of which represent very significant declines. Even larger relative decreases were recorded for the Latin and Greek and Slavic countries. The rate for the former was more than cut in half and that for the latter was reduced by 35 p.c. The Germanic and the Scandinavian countries, on the other hand, showed slight increases. The transfer of many who in 1921 mis-stated their nativity from the Austrian to the German classification would account, in part at least, for the higher rate for the Germanic group as a whole; in the case of the Scandinavians the rate is so low and the increase so small that it is not significant.

The same does not apply to the Asiatics whose rate rose from 59 to 181. For this increase the Chinese were responsible; the proportion of Japanese in penitentiaries fell drastically over the decade. The rate for the United States born was practically identical with that in 1921. On the whole, however, a comparison of the rates at the beginning and the close of the decade reveals a very real and significant improvement in respect to penitentiary commitments among the immigrant male population. This improvement was most marked in the nativity groups with excessively high rates in 1921, *viz.*, the Latin and Greek and Slavic peoples. The only case where there was an important *bona fide* increase was that of the Chinese. Nativity data for penitentiary inmates are an important index of assimilation for the immigrant born; Canadians should derive considerable satisfaction from the indicated progress during the last decade even though a portion of the improvement may have been attributable to age.

Citizenship of the Penitentiary Population.—Table 64 shows the numbers alien and naturalized of the penitentiary population of both sexes 21 years and over by countries of birth, and the rate per 100,000 of each group. Little comment is necessary. The one important fact brought out in the table is presented in the first row of figures. Of the 696 foreign-born inmates of Canadian penitentiaries in 1931, 455 (*i.e.*, 65.3 p.c.) were aliens. The second section of the table expresses the same fact in another way. The proportion in penitentiaries of the alien foreign born was 109 per 100,000, while that for the naturalized foreign born was only 44 per 100,000. The alien rate was two and a half times greater than that for the naturalized. Further, in the case of twenty out of twenty-eight individual countries of birth the rate per 100,000 immigrants was greater, usually several times greater for aliens than for those who had taken out Canadian citizenship. In seven out of the eight exceptions the absolute numbers were very small (12 or under in penitentiaries) so that departure from the rule may be regarded as accidental; the other case, that of the Chinese, is similar in that while the total inmates of this nativity reached the considerable figure of 73, the number naturalized was only 5, a number altogether too small to serve as a basis for a reliable rate.*

The alien foreign born still constitute our major problem in respect to serious criminal offences among immigrants in Canada. Nevertheless, a very striking change has occurred during the decade. In 1921, the rate for naturalized foreign born was only 20; in 1931 it had risen to more than double (44). Conversely, at the earlier census date the rate for the alien foreign born was 179; by the latter date it had fallen to 109. The evidence of penitentiary records thus points to increasing criminality among the naturalized and decreasing criminality among the alien foreign born. There seems to be no doubt that the differences in the rates quoted above represent a *bona fide* trend. Had the surplus of males among foreign-born residents of Canada been smaller in 1931 than in 1921, this conclusion would have been advanced with less assurance. In point of fact, the opposite was the case (see Table XVIII).

A number of possible contributory causes will suggest themselves to the thoughtful reader, but no positive statement on the subject is ventured pending an exhaustive study of trends in types of criminal offences and allied topics which are beyond the scope of this monograph. It is possible that the fear of being sent back to compulsory military service and other unpleasant experiences in the country of origin may have served as a deterrent to major crime at least until naturalization papers were completed.

Earlier in this chapter the statement was made that the high penitentiary rate for United States-born males was attributable to the professional criminal rather than the *bona fide* settler. While more direct evidence on this point will be advanced presently the mere fact that the rate for alien United States born (both sexes) attained the high figure of 212 per 100,000, as against the relatively moderate figure of 38 per 100,000 for naturalized United States born (Table 64) would seem in itself to leave no doubt as to its validity.

Racial Origin of the Penitentiary Population.—In Table LXXXV the adult penitentiary population (both sexes) is shown for selected racial origins. The Slavs are omitted for reasons explained below. In Column 3 are given the rates per 100,000. The marked differences between the proportions in penitentiaries for immigrants born in different countries have already been noted. Penitentiary commitments vary not only with birthplace but also with origin. The

* The figures in the preceding paragraph are based on both sexes. Since the aliens show a larger surplus of males than the naturalized and their age distribution is somewhat more favourable to crime, the above rates do not accurately reflect differences in criminal propensity. They merely localize the incidence of crime under existing conditions of age and sex distribution.

rates as given in the table, however, do not reflect merely differences of origin. Birthplace age and sex distribution and length of residence also influence the percentages; but before attempting to isolate the factor of origin, it is of interest to see in what sections of the population major offences were most common in and prior to 1931 for there the practical problem of law enforcement is most serious.

The first point to note is the marked variation in the proportions of the different stocks in penitentiaries. For many of the individual races the absolute numbers in penitentiaries are so small that the rates are unreliable. Let attention be fixed for the moment on origins having penitentiary populations of 50 or more. In this category one finds the following seven races*:

	Rate		Rate
1. German.....	40	5. Hebrew.....	78
2. British.....	47	6. Chinese.....	203
3. French.....	60	7. Negro.....	559
4. Indian.....	61		

As in 1921 the population of German extraction shows a very low rate, lower even than the British races. The figures for the French and North American Indians are somewhat higher being slightly above rather than below the average for population as a whole. The Hebrews come next, the rate for this stock being still below 80. Then there occurs a radical jump. The Chinese had a proportion of 203 and the Negroes 559.

* Excluding Slavic races.

TABLE LXXXV.—PENITENTIARY POPULATION (BOTH SEXES) 21 YEARS OF AGE AND OVER AND RATES PER 100,000 POPULATION FOR SELECTED RACIAL ORIGINS, CANADA, 1931

Racial Origin	(1) Peni- tentiary Population (21 years and over)	(2) Total Population (21 years and over)	(3) Rates ¹ per 100,000 Population
All races.....	3,287	5,886,215	56
British.....	1,538	3,281,867	47
English.....	693	1,661,666	42
Irish.....	464	754,842	61
Scottish.....	350	828,219	42
Other.....	31	37,140	84
French.....	869	1,446,251	60
Belgian.....	8	16,051	50
Chinese.....	84	41,383	203
Danish.....	13	21,056	62
Dutch.....	43	82,455	52
Finnish.....	10	30,471	33
German.....	105	259,523	40
Hebrew.....	79	89,783	78
Icelandic.....	4	11,417	35
Indian.....	51	83,424	61
Italian.....	74	47,165	157
Japanese.....	1	12,299	8
Negro.....	61	10,917	559
Norwegian.....	18	53,093	34
Roumanian.....	23	14,194	162
Swedish.....	13	49,495	26
Various and unspecified ¹	42	19,535	215

¹ Includes Syrian and Lithuanian, Other European and Asiatic.

* The reader is cautioned against regarding rates based on small numbers as reliable. Collectively, they have significance, but individually they mean little.

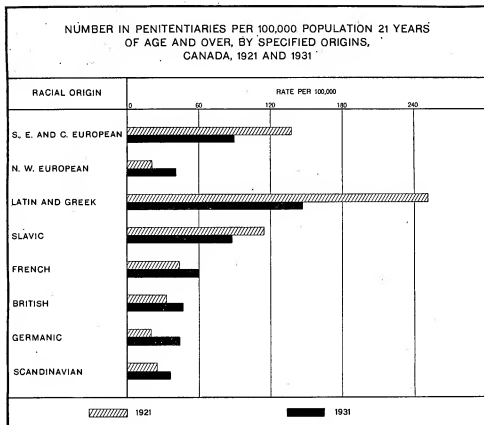


FIG. 41. Marked variation appears in the proportions of the various racial origins in penitentiaries. This variation is in part attributable to differences in age and sex distribution and in part to factors associated more intimately with cultural background and other circumstances. The incidence of penitentiary commitments as indicated by the present chart should not be confused with the propensity for crime. The latter is only one of several factors contributing to the differences depicted above. While penitentiary rates are still much higher for the South, Eastern and Central Europeans than for the North Western European racial origins, those for the former declined radically over the decade while those for the latter increased. A number of causes contributed to this difference in behaviour.

TABLE LXXXVI.—PENITENTIARY POPULATION (BOTH SEXES) 21 YEARS OF AGE AND OVER AND RATES PER 100,000 POPULATION, BY GEOGRAPHICAL AND LINGUISTIC GROUPING OF RACIAL ORIGINS, CANADA, 1921 AND 1931

Racial Origin Group	Peni- tentiary Population (21 years and over)	Total Population (21 years and over)	Rates per 100,000 Population	
			1921	1931
North Western Europeans.....	204	493,060	21	41
South, Eastern and Central European.....	387	407,715	138	90
Scandinavian.....	48	135,031	25	30
Germanic.....	156	358,029	20	44
Latin and Greek.....	98	66,511	232	147
Slavic.....	232	285,321	115	88

In the case of the Negroes age and sex distribution are not much more favourable to crime than with the population as a whole and much less favourable than for most immigrant peoples. Further, neither length of residence nor place of birth would account for their excessively high figure. There seems to be no question, therefore, that they are more given to serious crime than are any other people in Canada. The finding is consonant with that of 1921. The exceptionally high rate for the Chinese has already been commented upon.

When the European stocks are arranged by geographical and linguistic groups as in Table LXXXVI, the numbers are more representative and the rates more reliable. The North Western European group of foreign stocks had 41 per 100,000 21 years of age and over in penitentiaries in 1931, while the South, Eastern and Central group showed a figure of 90. The Latin and Greek stocks with 147 per 100,000 had a proportion some three to four times greater than that for the Scandinavian and Germanic peoples, and the Slavic stocks a proportion two to two and a half times greater. As was stated above, these figures in themselves prove nothing as to criminal propensities. They merely localize the problem of law enforcement as it existed in and directly previous to the year 1931.

Before attempting to eliminate the influence of age, length of residence, etc., from the data it is instructive to compare the rates for 1931 with those for 1921. Over the decade, the proportion in penitentiaries for the adult population as a whole rose from 39 to 56 per 100,000 or by nearly 45 p.c. For this increase the British, French and other North Western European races were largely responsible. The figure for the British races rose from 33 to 47, that for the French from 35 to 60 and for the North Western Europeans from 21 to 41. That for the Scandinavians as a group increased about 50 p.c. and that for the Germanic races more than doubled.* At the same time the rates for the South, Eastern and Central Europeans fell from 138 to 90. The figure for the Latin and Greek declined most from 252 to 147; that for the Slavs as a group dropped from 115 to 88. These changes would seem to indicate that the basic Anglo-Saxon and French stocks as well as the other North Western European, i.e., the stocks with relatively low rates, have been becoming more criminal, while the South, Eastern and Central European stocks which have been and indeed still are prominently represented in the penitentiary population have been becoming much less so.† This is the second significant change revealed by the comparison of 1921 and 1931 penitentiary data.

In closing this phase of the discussion a word should be said about the figures for the Ukrainians. In 1921 comment was made on the exceedingly low proportion shown by this origin in both penitentiaries and reformatories and some doubt was expressed as to the reliability of the underlying figures‡ This doubt seems to have been justified because in 1931 the rate for that origin was 66 per 100,000, which, when one takes into account the predominantly rural character of Ukrainian settlements, is quite close to that for the Slavic group as a whole (88).

Correlation between Penitentiary Rates, Age, Sex, Length of North American Residence and Percentage Urban.—In the absence of detailed cross-classification of penitentiary data for individual origins by age, sex, nativity and rural-urban distribution in 1931 and the inevitable unreliability of such rates, if they were available, because of small numbers, recourse was had to the device of partial and multiple correlation in an effort to measure and eliminate the influence of these factors from the crude ratios. Penitentiary inmates are largely adults so the surplus of males 21 years and over was chosen as the most appropriate independent variable reflecting sex differences. Since penitentiary inmates are almost exclusively male, the percentage of male adults between 20 and 34 years of age was taken as a rough index of age favourableness. These are the ages of excessively high incidence of penitentiary commitments. The proportion of adult males urban was introduced as a third variable and the percentage of the race North American-born was used as an index of length of residence. The correlation yielded a coefficient of only $R = .35$ which was both low and unreliable. It is hardly conceivable that these four variables would account for only 12 p.c. of the variability in the rates. An examination of the work tables showed that the correlation was not thrown out by extreme behaviour of the variables for one or two individual races. It is possible, of course, that a slightly higher figure might have been obtained had a more accurate age index been computed, but it could hardly have raised it enough to be significant.

The conclusion, therefore, seems to be either that the racial origin data for individual origins as recorded by the institutions concerned failed to correspond precisely with the classification followed by the census enumerator collecting statistics for the population as a whole, or that differences in criminality as between origins are largely racial, using the term in a broad sense.

* Part of this increase is attributable to the transfer of Austrians, who mis-stated their origin in 1921 to the German classification in 1931. This fact also accounts in part for the decline in the rate for persons of Austrian extraction. The Austrian race has a much higher rate than the German.

† Changes in age and sex distribution, of course, must be taken into consideration in comparing 1921 and 1931 rates, but these could hardly have been great enough to account for more than a portion of the differences in the behaviour of the rates for the several origin groups during the period under review.

‡ Hurd, W. B.: *Origin, Birthplace, Nationality and Language of the Canadian People*, p. 184, Dominion Bureau of Statistics.

The first alternative finds support in the subsequent analysis of origin data as tabulated by mental institutions (see Chapter XIV) as well as in the penitentiary rates themselves. The rate for the Austrians was 139 while that for the Hungarians was only 28 despite much more favourable age, sex, rural-urban distribution and length of residence. Such figures are unreasonable. The same applies to 66 for the Ukrainians and 89 for the Polish as against 165 for the Russians. These origins are often confused, and there seems to be little doubt that a good many Hungarian, Polish and Ukrainian penitentiary inmates were improperly credited to the Austrian and Russian racial classifications.* This type of error is not so likely to apply as between the individual North Western European origins nor as between the North Western and the South, Eastern and Central European stocks. There is, therefore, every probability that the rates for the linguistic and geographical groups of origins as used earlier in this section are quite reliable, but the obviously defective nature of the racial classification for the individual South, Eastern and Central Europeans—particularly the Slavs—makes it impossible to arrive at any definite conclusions as to differences in criminal propensities between the individual races until more satisfactory racial origin data on penitentiary inmates are available.

It is of passing interest to note, however, in the equation obtained from the correlation, that large proportions of young adults, a large surplus of males and a large proportion urban are all favourable to a high penitentiary rate. The rate also seems to go up with length of North American residence. If this finding were reliable it would point to higher criminality among the second and possibly subsequent generations of certain classes of immigrant origins but the correctness of the indicated relationship is very doubtful.

There is one circumstance, however, that may have some significance. For eleven of the twelve North Western European races included in the correlation the actual numbers in penitentiaries per 100,000 population were below the expected and by an average of about 30 p.c.† the actual for every South, Eastern and Central European race, on the other hand, exceeded the expected and on the average by over 60 p.c. This lends some support to the view that the propensity to crime is in some measure at least a product of racial background.

It would be a simple matter to raise the present correlation to a quite significant figure by relating the deviations from prediction with certain variables which have been shown elsewhere in this monograph to be largely racial in character, but in view of the apparent defects in certain sections of the basic data such procedure would be open to serious objection.

Penitentiary Rates Corrected for Age and Sex for Specified Groups of Racial Origins.—As was intimated above the obvious defects in penitentiary records for individual racial origins are largely eliminated when the data are combined into geographical and linguistic groups of origins. This was done in Table LXXXVII in which appear the crude rates per 100,000 both sexes 15 years and over, and corresponding rates corrected for differences in age and sex. In the absence of specific penitentiary rates by age and sex for individual origins, the correction was put through by the indirect method. The all-Canada rates by five-year age groups were taken as standard for each sex, applied to the peculiar age and sex distributions of the several origin groups and expected rates computed for the population (both sexes) in each racial category.

TABLE LXXXVII.—CRUDE RATES PER 100,000 POPULATION 15 YEARS OF AGE AND OVER, IN PENITENTIARIES (BOTH SEXES) AND RATES CORRECTED FOR AGE AND SEX, BY SPECIFIED GROUPING OF RACIAL ORIGINS, CANADA, 1931

Racial Origin Group	Rates per 100,000 Population		Racial Origin Group	Rates per 100,000 Population	
	Crude	Corrected		Crude	Corrected
South, Eastern and Central European.....	86	66	Slavic.....	83	64
North Western European.....	40	37	French.....	57	58
Latin and Greek.....	142	118	British.....	44	47
			Germanic.....	41	39
			Scandinavian.....	36	29

Comparison with the corresponding all-Canada rate yielded an index measuring the amount by which the age and sex distribution of each group was more or less favourable to penitentiary

* The figures for all Slavic races were omitted from Table LXXXIV because of the obviously misleading nature of the rates for these individual origins.

† The exception was the "Other British" whose rate was unreliable because of the small numbers involved.

commitment than was that of the population as a whole. When this index was applied to the crude rates as shown in Column 1 (Table LXXXVII) the corrected rates in Column 2 were secured. These rates constitute a fairly accurate measure of ethnic propensity for serious crime in the existing situation with respect to nativity, length of Canadian residence, occupational distribution and other environmental conditions surrounding the several racial groups in Canada (see Fig. 42).

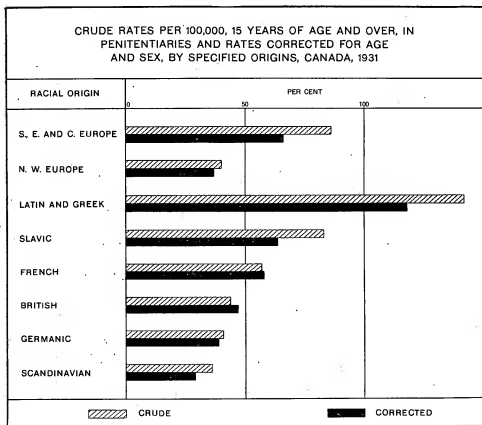


FIG. 42. Comparison of the solid black bars gives a fairly accurate idea of the relative propensity of the several origin groups for serious crime under existing conditions as to length of Canadian residence, occupational distribution, nativity, etc. Comparison of the hatched and solid black bars by individual origin shows the extent to which peculiarities of age and sex distribution distort the crude rates—and the direction of the distortion.

CHAPTER XII

OCCUPATIONAL DISTRIBUTION AND UNEMPLOYMENT

Occupations of the Population by Sex and Birthplace.—The census tabulates males and females by gainful occupation and nativity and Tables 65 and 66 show the numbers and percentages classified as of Canadian, British, United States, European and Asiatic birth in certain principal occupations of Canada.* This tabulation and that in the succeeding section should be distinguished from the employment (and unemployment) data discussed in the latter part of the present chapter. "Gainful occupations" include *all* occupations by which persons earn money or money equivalent; the census of unemployment was taken for "wage-earners" only. The occupational records indicate the types of occupations at which people normally work when they are employed; they include several hundred thousand who were out of work at the date of the census. In a word they apply to the whole working population whether employed or unemployed on June 1, 1931.

In 1931, there were 4.9 times as many males as females with gainful occupations in Canada as compared with nearly 5.5 times as many in 1921. At the last census there were 23.6 *Canadian-born* females per 100 Canadian-born males in gainful occupations. With the *United States and European born* the ratios were much smaller being 16.1 and 10.5 per 100 respectively. Among the reasons for these differences at least three are worthy of mention: first, there is a much larger proportion of men in the European-born population in Canada than in the Canadian-born; second, a larger percentage of the European-born women marry and are employed in the home; and third, settlers from Europe and the United States, have on the whole been more agricultural than the Canadian born. In the country many women work at home on the farm, while if the family lived in the city, many would take employment outside the home and appear in the census return as persons with gainful occupations. As it is, they are not so listed in the census.

The number of British-born females reporting gainful occupations per 100 employed males in the same category (18 per 100) is also smaller than that for the Canadian born but it is not so small as that for the United States or European born. Greater inequality of the sexes and a higher marriage rate account for the proportion being smaller than in the case of the Canadian born. The converse relationship obtains as between the British and European born as a group. The percentage of British-born women married was somewhat smaller than the proportion among those of European birth and the surplus of adult males was very much smaller. When one couples with these circumstances the fact that British immigration is characterized by extremely modest proportions settling on the land, it is not difficult to understand why the figure for the British-born women is higher than that for the Continental Europeans. Immigration from the United States shows a proportion engaged in agriculture over twice that for immigrants from the British Isles. This is the chief reason for the United States ratio being lower.

Some interesting changes have occurred over the decade in the ratio between the numbers of men and women with gainful occupations. Comparative figures for 1921 and 1931 are as follows:—

TABLE LXXXVIII.—FEMALES 10 YEARS OF AGE AND OVER REPORTING GAINFUL OCCUPATIONS PER 100 MALES, BY SPECIFIED GROUPING OF COUNTRIES OF BIRTH, CANADA, 1921 AND 1931

Birthplace Group	1921	1931	Birthplace Group	1921	1931
All countries.....	18.3	20.4	British Possessions.....	20.5	21.7
Canada.....	20.5	23.6	United States.....	14.8	16.1
British Isles.....	18.4	17.9	Europe.....	7.1	10.5
			Asia.....	1.4	1.9

* See 1931 Census Monograph *The Evolution and Present-Day Significance of the Canadian Occupational Structure* by A. H. LeNeveu, also 1931 Census, Vol. I, Chaps. XVII and XVIII.

For the total population of all nativities and for each of the broad nativity groups except the British Isles, females constituted a larger proportion of the population with gainful occupations in 1931 than in 1921. The trend toward the increasing employment of females in gainful occupations thus continued over the past ten years. It is merely a continuation of a tendency which has been in evidence for several decades. An added impetus to female employment was received during the War period when large numbers of male workers were withdrawn from industrial and commercial pursuits for military service. Yet while the War undoubtedly served as a temporary stimulus, the fact that the change ante-dated the War period and has continued throughout the succeeding decade suggests that it is the result of certain fundamental and more or less permanent causes associated with social custom and industrial and business technique. The same combination of forces which brought about the heavy rural-urban migration of the past decade contributed to the more general employment of females in gainful urban occupations.*

Table LXXXIX gives the proportions of each sex with gainful occupations in 1921 and 1931 for the Canadian born, British born and foreign born. Unfortunately comparable data are not available for the United States, Asiatic and European born separately. The percentages are in terms of the population 15 years of age and over. This age was chosen despite the fact that occupational data include all ages from 10 and over. Since the number from 10 to 14 years of age reporting gainful occupations constitutes less than 1 p.c. of the total so reporting, the error involved is very small. Moreover, this procedure has a decided advantage. It is recalled that the proportion of children among the Canadian born differs radically from that among the British born and foreign born, and the inclusion of the 10-14-year group in the denominator would produce an exaggerated picture of the differences.

TABLE LXXXIX.—PERSONS IN GAINFUL OCCUPATIONS EXPRESSED AS PERCENTAGE OF THE TOTAL POPULATION 15 YEARS OF AGE AND OVER, BY BROAD NATIVITY GROUP AND SEX, CANADA, 1921 AND 1931

Nativity	Persons with Gainful Occupations as Percentage of Population 15 Years and over			
	Males		Females	
	1921	1931	1921	1931
All countries.....	89.2	87.8	17.7	19.7
Canadian born.....	87.5	85.4	18.2	20.5
British born.....	92.3	92.0	19.5	19.0
Foreign born.....	93.3	93.5	12.4	15.7

An examination of the table reveals some significant facts. While the number of *males* of Canadian birth engaged in gainful occupations in 1931 represented only 85.4 p.c. of the total Canadian-born males 15 years of age and over, the proportions of the British-born and foreign-born were 92.0 and 93.5 p.c. respectively. With the *females*, the situation is reversed; the women of Canadian birth take remunerative work somewhat more generally than the British-born and considerably more so than the foreign-born. In 1931 the proportion of Canadian-born women with gainful occupations was 20.5 p.c. as compared with 19.0 p.c. for the British-born and the still lower figure of 15.7 p.c. for the foreign-born. Thus, while the British- and foreign-born *males* are normally engaged in the country's industries to a relatively greater extent than the Canadian-born, the *females* of these nativities find employment outside the home to a much less marked degree.

The question immediately arises as to how far these differences are attributable to the accident of age distribution and how far to other causes. The influence of age can be eliminated by using as a standard the percentages with gainful occupations in each age and sex category of the population as a whole and computing expected rates for the several nativities on the basis of its peculiar age distribution as shown in Table 21. These percentage rates together with the actual and the actual as a percentage of the expected are shown below for males and females separately for the year 1931.

* In this migration women considerably outnumbered men. See Hurd, W. B. and Cameron, J. C.: *Population Movements in Canada, 1911-51—Some Further Considerations*, The Canadian Journal of Economics and Political Science, Vol. I, No. 2, May, 1933.

TABLE XC.—ACTUAL PERCENTAGES OF POPULATION 15 YEARS OF AGE AND OVER REPORTING GAINFUL OCCUPATIONS, EXPECTED PERCENTAGES ON THE BASIS OF EXISTING AGE DISTRIBUTION AND ACTUAL AS PERCENTAGE OF THE EXPECTED, BY NATIVITY AND SEX, CANADA, 1931

Nativity	Males			Females		
	Expected P.C. with Gainful Occupations on Basis of Existing Age Distribution ¹	Actual P.C.	Actual as P.C. of Expected	Expected P.C. with Gainful Occupations on Basis of Existing Age Distribution ¹	Actual P.C.	Actual as P.C. of Expected
All countries.....	87.8	87.8	100.0	19.7	19.7	100.0
Canadian born.....	85.6	85.4	99.6	20.5	20.5	100.0
British born.....	91.1	92.0	101.0	16.6	19.0	114.5
Foreign born.....	93.2	93.6	100.3	18.2	15.7	86.3

¹ Adjusted for omission of age group 10-14.

With the *males*, difference in age distribution is almost entirely responsible for the recorded differences in the proportions with gainful occupations. The foreign- and British-born males showed proportions higher than that for the Canadian-born because they had relatively more in the late 'teens, the twenties and the thirties which economically are the most productive years of life. By the same token they had fewer in the higher age categories. The extent to which their proportions with gainful avocations exceeded that for the native Canadians was in both cases practically equal to the degree to which their age distribution was more favourable.

Turning now to the *females*, it is seen at once that differences in age distribution account for only part of the variation in the proportions normally seeking gainful employment. When the age factor is eliminated the figure for British-born females runs between 14 and 15 p.c. above expectation, while that for the foreign-born falls short of expectation by almost as large an amount. Or more specifically, less favourable age distribution accounts for half the amount by which the proportion of foreign-born females reporting gainful occupations fell short of that for the Canadian-born. An explanation of the balance must be found in other causes among which might be mentioned the circumstance that much larger proportions of foreign-born females marry than of the Canadian-born and they marry younger, so that relatively fewer would normally seek gainful employment outside the home. Moreover, as was pointed out above, larger proportions of the foreign-born are on the farm. These are doubtless the more important factors, other than age, making for relatively low proportions of foreign-born females in gainful occupations. Difference in cultural background and attitude toward female employment may also be causes of some importance. Turning to the British-born, on the basis of age distribution one would have expected to find only 16.6 p.c. British females with gainful occupations as against 20.5 p.c. for the Canadian-born. The actual figure was 19.0 p.c. and this despite moderately higher proportions married than with the Canadian at all ages above 19. These figures point to the conclusion either that larger proportions of the British-born than of the Canadian-born females normally seek employment or that the former are preferred by employers. The fact that larger proportions live in urban centres and the further fact that in the British Isles gainful employment among women is much more general than in Canada lend some support to the former alternative. Female immigrants from Great Britain certainly bring with them no prejudice against getting out and earning a living and besides it may well be that a larger proportion is forced to do so because of straitened economic circumstances than obtains with the native-born daughters of earlier and often better established Anglo-Saxon settlers. The relatively large numbers of British-born females engaged in domestic service and the small proportion in professional occupations as compared with the Canadian-born would seem to point to generally less favourable material circumstances in the case of the British women from overseas.

Were separate data available for the Canadian-born *daughters* of foreign-born mothers, i.e., for second generation of immigrants, they would probably show larger percentages with gainful occupations than any appearing for women in the adjacent table. Such, at least, seems to be the experience in the United States.

Some interesting changes have occurred during the decade (Table LXXXIX). First, for the population as a whole, the proportion of males with gainful occupations in 1931 was lower than in 1921 while that of females was higher. This supports the evidence adduced above as to the trend towards increased female employment (particularly in urban centres). Further analysis shows that changes in age distribution were of minor importance, accounting for only one-fifth of the spread between the increase in the percentage of females engaging in gainful employment and the decrease in the percentage of males (see below).

Second, the behaviour of the figures for the several nativities varied considerably. The proportion of Canadian-born males with gainful avocations experienced a radical decline during the decade, that for the British-born fell slightly, while the percentage for the foreign-born was actually fractionally higher in 1931 than in 1921. With the females the situation was somewhat different. The proportion of Canadian-born reporting gainful occupations as well as that of the foreign-born showed a significant increase while that for the British-born declined. Here again, it is important to know how far these differences are merely matters of age and how far they reflect *bona fide* trends. The age factor was evaluated by computing expected percentages with gainful occupations in 1921 on the basis of specific rates for 1931 as standard and comparing them with the percentages similarly computed for 1931. The results are tabulated in the ensuing table.

TABLE XCI.—ACTUAL CHANGE IN THE NUMBERS 15 YEARS OF AGE AND OVER REPORTING GAINFUL OCCUPATIONS PER 100 (a) MALES AND (b) FEMALES, AND EXPECTED ON THE BASIS OF CHANGE IN AGE DISTRIBUTION, BY NATIVITY AND SEX, CANADA, 1921-1931

(Increase + ; decrease -)

Nativity	Males			Females		
	Expected Change on Basis of Change in Age Distribution	Actual Change	Actual Minus Expected	Expected Change on Basis of Change in Age Distribution	Actual Change	Actual Minus Expected
All countries.....	-0.6	-1.4	-0.8	-0.1	+2.0	+2.1
Canadian born.....	-1.5	-2.1	-0.6	+0.4	+1.3	+0.9
British born.....	+2.0	-0.3	-2.3	-1.9	-0.6	+1.4
Foreign born.....	+1.3	+0.2	-1.1	-2.0	+3.3	+5.3

The precise meaning of the above figures may be illustrated by reference to the data for all nativities. During the decade the age distribution of males became less favourable to the possession (or acquisition) of a gainful vocation by virtue of which change, one would have expected a decline of 0.6 persons with gainful occupations per 100 males 15 years of age and over. Actually a decrease of 1.4 per 100 occurred leaving a balance of 0.8 which roughly measures the extent to which economic conditions prior to 1931 were less favourable to the acquisition of an independent means of livelihood on the part of young men and hastened the retirement of the old. Of the two, the former was undoubtedly the more important. For the females, less favourable age distribution might have been expected to bring about a decline of 0.1 persons with gainful occupations per 100 females 15 years of age and over. Contrary to expectation on the basis of age, there occurred an actual increase of 2.0 per 100, the difference 2.1 representing the increase in the proportion of females with gainful avocations, attributable to causes other than age.

Reverting now to the males and fixing attention on the third column it is seen that while between 1921 and 1931 the number of Canadian-born males with gainful occupations per 100 males 15 years and over fell 0.6 points from causes other than change in age distribution, that for the British-born declined 2.3 and that for the foreign-born 1.1 points. These figures when taken in conjunction with those in the preceding part of the section seem to imply that while in 1921, age for age, appreciably larger numbers of British- and foreign-born males than of Canadian-born ordinarily earned their living in some gainful employment, by June 1, 1931 this disparity had been greatly reduced. In the years preceding 1931, British- and foreign-born young men would seem to have encountered relatively greater difficulty in getting a start in business than did the Canadian-born and the enforced retirement of those in the higher age categories may have

been somewhat more general. Yet age for age, the British- and foreign-born males still had slightly higher proportions with gainful occupations in 1931 than did the native-born. The fact that Canadian-born youths as a rule remain longer at school is a partial explanation of the smaller percentage of males in gainful occupations; on the other hand, their generally higher educational status seems to have given them an advantage in competing for jobs especially during the later years of the decade.

With the females, the proportions with gainful occupations instead of declining actually increased over the ten-year period. Moreover, variation in the amount of change was even greater than with the males. When the influence of *more* favourable age is deducted, the percentage of Canadian-born females 15 years and over accustomed to earn their living outside the home rose 0.9 points; when the influence of *less* favourable age distribution is added the figure for the British-born increased by 1.4 points and that for the foreign-born by 5.3 points. What do these data imply? They indicate, in the first place, that age for age, materially larger numbers of foreign-born women have been seeking gainful employment in recent years and with success. How far this change is accounted for by delayed marriage, relatively intense economic pressure arising from the depression and the more urban character of recent immigration is difficult of measurement, but no doubt all three factors contributed appreciably to the result. Age for age, the increase in the proportion with gainful occupations for this nativity was nearly four times greater than that for the British and nearly six times that for the Canadian born.

After making due allowance for changing age distribution the increase in the rate for the British-born females materially exceeded that for the Canadian-born despite the higher specific employment rates for the former nativity. This result is probably also associated with causes similar to those mentioned, notably, generally less favourable economic circumstances in the homes of immigrants, the predominantly urban domicile of British-born females and perhaps a greater readiness both on their own part and on the part of their families to consider employment outside the home.

Summarizing then, while the proportion of Canadian-born *males* reporting gainful occupations in 1931 was smaller than that for the British- or foreign-born, the differences were almost entirely attributable to less favourable age distribution. In 1921, the percentages of British- and foreign-born males with gainful occupations exceeded that for the Canadian-born by amounts greater than can be accounted for by their more favourable age distribution; by 1931 the situation had been corrected, at least temporarily, to the advantage of the Canadian born and to the disadvantage of the other nativities. In contrast with the males *bona fide* differences did occur in the proportions of *females* with gainful occupations at the last census date. Age for age, materially larger proportions of British-born and materially smaller proportions of foreign-born females were reported as normally employed outside the home than obtained with females born in Canada. In further contrast with the males, the decade witnessed a significant increase in the proportions of females with gainful avocations despite on the whole slightly less favourable age distribution at its close. When the influence of age is eliminated, the increase was several times greater in the case of the foreign born than with either the Canadian or British born, but age for age employment is still less general in the former group.

These findings would seem to have more than passing significance. Further light will be thrown on the subject in the subsequent discussion of occupational distribution. The incidence of unemployment among wage-earners of the different sexes and nativity groups is examined at the close of the chapter.

Proportions in Specified Occupations.—Turning now to a detailed examination of Table 66, attention is first directed to the occupational distribution of the male population 10 years of age and over in 1931. Approximately 36.4 p.c. of the Canadian-born males with gainful occupations were agriculturists; 12.1 p.c. were among the unskilled labourers; 10.2 p.c. in manufactures; 8.1 p.c. in commerce; 8.0 p.c. in transportation and communication; 7.7 p.c. in services of various kinds, and 6.1 p.c. in construction. These seven groups of industries thus accounted for about 90 p.c. of the male working population of Canadian birth in Canada. A comparison of the distribution of the immigrants among the Canadian industries with that of the Canadian-born males is suggestive. Some 21.2 p.c. of the males from the British Isles gave agriculture as their nominal vocation as compared with 36.4 p.c. for the Canadian-born males. That this should be so was anticipated in the section on rural and urban distribution of immigrant popu-

lation. The British born showed a relatively high percentage living in urban districts. While the males from the British Isles had a much smaller percentage in agriculture than the Canadian-born males, they showed about half again as large a proportion in all manufacturing industries and over twice as large a proportion in the metal trades. The construction and service groups also claimed much larger proportions of the British immigrants and the same is true of mining and quarrying. As compared with the Canadian born, relatively few engaged in fishing, logging and trapping.

Immigrants from the British Possessions show the least inclination to go into agriculture. Of males from portions of the British Empire other than the British Isles, less than 10 p.c. were found to be farmers in 1931, i.e., only one-third to one-fourth as large a proportion as for the Canadian-born males. Apart from unskilled labour the main occupations attracting immigrants from the British Possessions are those in the "service" category, particularly professional; manufacturing ranks next and as with immigrants from the British Isles the metal industries claim large numbers. The proportions in building and construction and transportation are also large—much larger than for the Canadian born—and the proportion normally engaged in mining, quarrying and well-drilling is exceedingly high.

Thus, speaking generally, the immigrant males of British birth avoid agriculture, but concentrate in mining, manufacturing, building and transportation to a much greater extent than do the Canadian born. The proportions engaged in commercial pursuits are about on a par for the males of both nativities.

Unlike the British-born immigrants, a large percentage of those from the United States was found in agriculture. Nearly 48 p.c. of the male workers of United States birth in Canada in 1931 reported themselves as agriculturists—a proportion 30 p.c. greater than that of the Canadian-born male population and over twice that for the British-born. The French, Germanic and Scandinavian immigrants from the United States are almost exclusively agricultural people, and probably a larger proportion of the Anglo-Saxon settlers who came from the United States were agriculturists than of those coming directly from the British Possessions or the British Isles. Immigrants from no other nativity group showed such a large percentage of farmers as is shown by the United States-born male immigrants in Canada. All other occupations except commerce and the service group claimed a smaller proportion of the United States-born immigrants than of the Canadian born.

The Continental European-born males as a group are also largely agricultural, although not to such a marked degree as the United States-born. That statement does not apply to the immigrants from all European countries; it applies merely to the total, and if reference be made to the rural and urban distribution of Europeans in Canada in Chapter V it will be seen that there are many specific European nationalities for whom the reverse is true. The Hebrews for example, from every section of Europe are an exceptionally urban people. The Italians and Greeks are also among the most urban settlers. What is true of Europeans in general, however, is true of the Scandinavian and Germanic peoples as a whole. The Finns and a number of the Slavic peoples are also predominantly rural, notably the Russians, Ukrainians and Austrians (see Table 39, p. 255). European-born males also show relatively large proportions in mining and quarrying. Manufacturing claims about as large a proportion as it does of the Canadian born; building and construction, transportation, commerce and the services much smaller proportions, and unskilled occupations relatively more. Well over a fifth (21.7 p.c.) of the European-born male workers in Canada in 1931 were listed as labourers and unskilled workers, the highest proportion in any nativity group and four-fifths larger than that for the native Canadians. It is unfortunate that the work involved in classifying the European group by occupation and specific countries of birth is so great, for such a table would be especially enlightening. However, by comparing the tables on occupational distribution for Europeans as a whole with those showing rural and urban distribution for specific peoples in Chapter V, a general idea of occupational distribution may be obtained for a number of the individual immigrant peoples from various parts of the continent.

The Asiatic males, like those from the British Possessions, were on the whole not greatly attracted to agricultural employments according to the 1931 figures. The logging and fishing and trapping occupational groups claimed slightly disproportionate shares of such immigrants, but the major occupational groups were first, domestic service which accounted for nearly 43 p.c.

and second, unskilled labour which accounted for 21 p.c. The occupational distribution of the Asiatics is unique. Few Asiatic males are found in building and construction, transportation and communication. Commerce is the only other category where the proportion is as great as that for the Canadian born.

The material is presented graphically by principal occupations in Fig. 43. It is seen that the United States immigrants are by far the most agricultural of all incoming peoples and that the Continental Europeans as a group stand second. The proportion in agriculture for both of these immigrant groups is greater than that of the Canadian-born males. The least agricultural are the Asiatics and those from the British Possessions. Immigrants from the British Isles, though showing a larger proportion of males following agricultural pursuits than either the Asiatics or those from the British Possessions, rank far behind the Canadian- and European-born males in this respect and very much further behind the United States-born settlers.

In the manufacturing and the construction and transportation groups, immigrants from the British Isles and British Possessions lead. The European and United States born show about as large proportions as the Canadian born in manufacturing but much smaller proportions in building and construction. A fair number of United States born are in some branch of transportation or communication but few Europeans. The proportion of Asiatics in all three industries is negligible. The section of the chart dealing with the groups of industries under the heading "commercial" is unique in that the variation in proportions as between the several nativity groups is very slight. A comparatively few European nationalities raise the percentage of the Europeans to a figure approaching that for the Canadian born. In the service group the Asiatics lead through having such a large proportion of their male workers in personal and domestic services. The numbers in custom, repair and professional work are negligible. Europeans and Asiatics rank first and by a wide margin in the proportions classed as unskilled labourers. The United States born show the smallest proportions of male workers in this category.

A few words remain to be said regarding the distribution of the females with gainful occupations. The pertinent data also appear in Table 66 (p. 804). As has been pointed out, the proportion of females among immigrants is comparatively small as compared with that in the native Canadian population, and this fact should be kept in mind in comparing the percentages for the various nativity groups. Over 52 p.c. of all women with gainful occupations in Canada appear in the service group, practically all of whom were either in domestic or professional services. The British Possessions show the largest percentage in all services (64 p.c.), with Europe, Asia, United States, the British Isles and Canada following in descending order. Europe leads in the proportion in *domestic* service, with Asia and the British Possessions following at some distance. The United States- and Canadian-born females show by far the smallest proportions reporting this class of occupation. These two nativities, on the other hand, lead in the professional service category and the Europeans are at the bottom.

While service is the most important occupational group for women irrespective of nativity, clerical work ranked second in importance and trade third for the women of all nativities except European and Asiatic. With the Europeans manufacturing ranked second, commerce third and clerical fourth; with the Asiatics commerce comes second, manufacturing third and clerical fourth. The textiles claimed a larger proportion of women than all other manufacturing industries combined.

Generally speaking, the bulk of the women who earn their living are in the service group, especially in domestic service. Considerable proportions are in clerical work, particularly among the Canadian, British and United States born. Many also are in manufacturing, notably in the textile industries. Of the remainder the largest proportion is in trade. The percentage in the extractive industries and in heavy manufacturing work is small.

Occupations of the Population by Racial Origin.—In 1931, persons reporting gainful occupations were cross-classified by sex and racial origin for Canada and the provinces. The racial composition of the working population in the several provinces differs radically (see Census Volume VII, Table 49). The principal reason for these differences is variation in the racial composition of the population as a whole. As was pointed out in Chapter IV, the variation is very considerable; indeed it is so great as to completely overshadow differences in the occupational preferences and habits of individual origins. Attention in this section, is, therefore, confined to the Canadian population in the aggregate. Table 67 presents a percentage distribution by

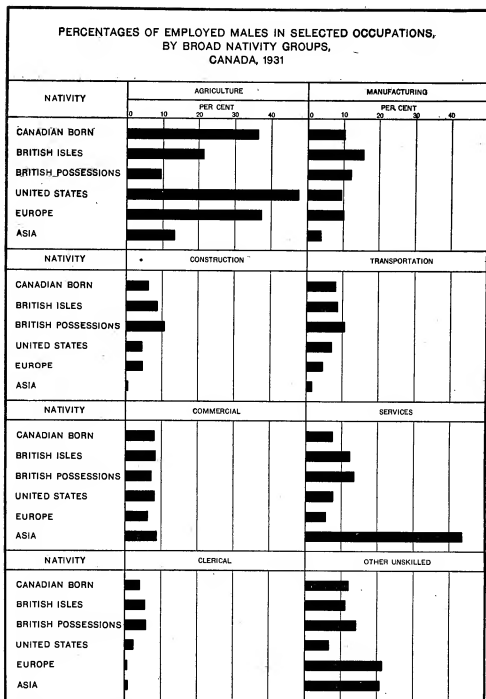


FIG. 43. The underlying data include all males 10 years of age and over reporting gainful occupations. Many persons so reporting were, of course, out of employment at the date of the census.

occupation of persons with gainful occupations classified by racial origin for Canada, 1931 and Table 68 shows a distribution by racial origin for each occupational group, the data for the sexes being tabulated separately in each case.

From Table 67 it is possible to get some idea of the occupational distribution of a number of the more important racial groups. In many instances, occupational distribution reflects *bona fide* occupational preferences. To some extent, of course, the type of economic opportunity available at the time of immigration is a determining factor. This would apply to a greater extent in the case of origins experiencing relatively large additions through immigration in recent years. There is no doubt, for instance, that much larger proportions of certain agricultural peoples coming from Central Europe during the last decade would have been engaged in agriculture had that industry been relatively as prosperous between 1921 and 1931 as it was before the War when other classes of immigrants arrived in greater numbers. Origin data, however, include not only the immigrant but the Canadian-born section of the several stocks so that for those races where a relatively long average length of residence in this country has permitted geographical and occupational readjustment, existing occupational distribution reflects with a very considerable degree of accuracy underlying occupational preferences and aptitudes.

An exhaustive analysis of Table 67 will not be attempted. Attention will be confined to a few of its more outstanding features for the benefit of those who might be deterred from examining the table because of its rather formidable appearance.

Because of their numerical predominance the occupational distribution of the population as a whole conforms closely to that of the British and French races. Certain minor differences appear as between the individual British races and the French and British as a whole. For example, the English in Canada, engage in agriculture much less generally than the Irish and Scottish; they show an appreciably greater preference for manufacturing. Only minor differences appear between the occupational distribution for the French and the Anglo-Saxon population as a whole. Males of French extraction show slightly smaller percentages in certain manufacturing occupations, transportation and communication, commerce and finance, and an appreciably larger proportion under the heading "unskilled labourers". The latter is attributable to some extent to a tendency on the part of census enumerators in French Canada to class as "*ouvriers*" many persons who would not be reported as "unskilled labourers" in the English-speaking provinces. Females of French origin, on the other hand, show considerably larger proportions in manufacturing, particularly the textile industry, and in domestic service, and relatively fewer in commercial and clerical employments.

The Central Europeans are divided into two groups whose occupational distribution is quite different. The Austrians and Germans as a group are the most agricultural people in Canada with a percentage of males on the farm nearly two-thirds larger than for the population as a whole. Next to the Hebrews, they also show the greatest preference or aptitude for manufacture. In other occupations they have well below the average representation including that of unskilled labour. The "other" Central Europeans, including the Czechs and Slovaks, Hungarians and Yugoslavs, as a group have tended to avoid agriculture and go in for unskilled labour largely in urban centres. Approximately 40 p.c. of the males in this classification are listed in the latter category, a proportion three times larger than for the population as a whole. While the German and Austrian females show proportions considerably above the average in domestic service the concentration in this occupation is not nearly so great as with the "other" Central Europeans. Approximately 73.4 p.c. of the latter group appear in this category and unlike the Austrians and Germans they have little or no representation in the professions, in commerce or in clerical employments.

The occupational distribution of the Dutch is quite similar to that of the Germans except for a considerably smaller proportion of males in manufacture, particularly the metal industries, a somewhat smaller proportion of females in domestic service and larger proportions in the professions, commerce and clerical work. The Eastern European group which in the present table includes the Polish, Russian, Ukrainian and Roumanian and certain other numerically smaller origins are, in many respects, midway between the Germans and the "other" Central Europeans. They show quite large proportions in agriculture—indeed the proportion of gainfully occupied women on the farm is the highest for all white races; the men are well represented in the unskilled labour classification with almost twice as large a percentage as for the population

as a whole; and the percentage of gainfully occupied women in domestic service approaches that for the "other" Central Europeans. They have fewer than average in manufactures, building and construction and transportation and have a negligible representation in commerce, finance, the professions and clerical employments.

The Hebrew is the outstanding commercial race in Canada with a five-times larger proportion of their gainfully occupied men engaged in trade than obtains in the population as a whole and a two and one half times larger proportion of their women. They are also between two and three times as prominent in manufacturing (particularly clothing) as the average* and their gainfully occupied women are found in clerical occupations to a far greater extent than the women of any other origin in Canada. Practically none of the males are farmers or unskilled labourers and abnormally small proportions of the females are in the domestic or other service categories. A few have gone into the professions, probably teaching.

The occupational distribution of the Italians resembles that of the Hebrews in the avoidance of agriculture and in the female concentration in the textile industry. It differs in the small proportion of males in the latter occupation, the moderate number of males in commerce and in the large proportion of unskilled labourers. With 35 p.c. of their male workers classed as common labourers as compared with 13.04 p.c. for the population as a whole, the Italians rank second only to the "other" Central Europeans in the proportion following this class of work. Like the Hebrews, abnormally large proportions of the females are in commerce (as well as the textile industry). Fewer than average are in the service and clerical groups.

The Scandinavians are much like the Dutch in their occupational preferences, except for a greater emphasis on fishing, hunting, logging, trapping and mining and a somewhat smaller representation in transportation and communication, commerce and the services. Both are primarily agricultural people and avoid the unskilled labour market. The Scandinavian women are notable for their avoidance of the factory and their preference for domestic service. Over half of the females of this origin group reporting gainful occupations are found in personal service. They are also fairly well represented in the professions and in clerical employment.

The outstanding feature of the occupational distribution of the Chinese is the large proportion of males in the service group (52.33 p.c. as compared with 8.82 p.c. for the population as a whole). In this category domestic service leads with 36.08 p.c. and laundering, etc., accounts for most of the balance (15.87 p.c.). There are also quite a number of unskilled labourers among the Chinese. Relatively few are in agriculture (11.77 p.c.) or manufacturing (2.63 p.c.). The proportion in commerce (6.70 p.c.) conforms more closely to that for the population as a whole.

The Japanese go in for agriculture to almost twice the extent that the Chinese do though the proportion is still less than three-fifths as large as for the population generally. They have about the same percentage in unskilled labour and in commerce as the Chinese, but only one-sixth as many in the service group. The proportion in manufacturing is only slightly under the general average. Most of these are concentrated in the wood products and pulp and paper industry. The really distinctive feature of the Japanese occupational distribution, however, is the large proportion in fishing, hunting and trapping. Approximately 18.3 p.c. of Japanese male workers are in this group (principally fishing), as against 1.45 p.c. for the males of all origins. There are also considerable numbers in logging. In this industry the Japanese show twice the proportion shown for the Scandinavians, three times that for the French and six times that for the male population as a whole. Oriental women are not numerous in Canada. Of those who take gainful employment the majority are in the service group; trade is also important with the Chinese women and textile manufacturing with the Japanese.

Of the North American Indians who reported gainful occupations 29 p.c. were listed as farming, 45 p.c. fishing, hunting and trapping and 14 p.c. as working at unskilled labour. The other 12 p.c. were scattered among a great variety of occupations.

Table 68 lends itself to a similar type of analysis and shows the differences in occupational distribution perhaps even more clearly than Table 67. For example, the males of British extraction represented 53.04 p.c. of the total number of males with gainful occupations in Canada. In fishing, hunting, trapping, logging and common labour they fell far below this quota and in agriculture, personal service and mining appreciably below. In manufacturing, construction, transportation and communication, on the other hand, they were well above and in finance,

* Attention is drawn to the exceedingly high proportion of males in this category.

professional service and clerical occupations very much above expectation. The data for the females may be similarly examined and for the other origins listed. It is interesting to compare the proportions contributed to our working population by the British and French with that for other origins as a group.

TABLE XCII.—PERCENTAGES BRITISH, FRENCH AND "OTHER" RACIAL ORIGINS, OF THE POPULATION 10 YEARS OF AGE AND OVER REPORTING GAINFUL OCCUPATIONS, OF SPECIFIED OCCUPATION GROUP AND SEX, CANADA, 1931

Occupation Group	Males			Females		
	British	French	Other	British	French	Other
	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.
All occupations.....	53.04	24.80	22.16	57.28	27.44	15.28
Agriculture.....	48.48	24.89	26.63	49.02	21.85	20.13
Fishing, Hunting, Trapping.....	32.22	21.23	46.55	-	-	-
Logging.....	26.66	42.31	31.03	-	-	-
Mining, Quarrying, etc.....	51.58	18.50	34.92	-	-	-
Manufacturing.....	57.68	24.41	17.91	43.23	41.09	15.68
Construction.....	56.83	20.35	13.82	-	-	-
Transportation and Communication.....	62.29	23.70	13.92	73.96	19.34	6.70
Commerce.....	60.35	21.35	18.30	62.48	22.91	14.61
Finance and Insurance.....	74.51	17.47	8.02	83.01	8.76	8.23
Professional Service.....	69.22	21.12	9.66	62.04	30.73	7.23
Personal Service.....	48.25	22.54	29.21	49.87	28.67	21.46
Labourers.....	73.67	19.62	6.71	76.81	13.49	10.00
Labourers.....	39.89	31.32	28.79	30.82	56.28	12.91

A glance at the above tabulation shows that the males of non-British and non-French races in the aggregate supply more than their share of workers to agriculture, fishing, hunting and trapping, logging, mining and quarrying, and to the personal service and common labour groups. By the same token they supply somewhat less than their share of workers in manufacturing, construction, transportation and commerce, and very much less in finance and the professions. The proportions of females of alien extraction in manufacturing, commerce and common labour is about in accordance with expectation on the basis of normal distribution; there is a marked excess, however, in agriculture and domestic service and a marked deficit in transportation and communication, finance, professional service and clerical occupations.

As was intimated above it is impossible to say with any great degree of accuracy, how far these occupational differences and particularly those discussed in earlier paragraphs are matters of race and culture in the widest sense and how far they are attributable to extraneous causes such as time of settlement and so forth. Anyone who has followed the preceding discussion will have discerned ample evidence of a rather close connection between educational status and the type of occupations most favoured by the various origin groups. The existence of certain racial aptitudes is also apparent, as in the case of the Hebrew preference for commerce, the Japanese for fishing, the Indian for trapping and that of Scandinavian females for household service. The latter is obviously volitional and in no way related to low educational status. Date of immigration and the relative advantages offered by different occupations in the country at the time of arrival are doubtless also factors of some importance. Recent immigration from Central and Eastern Europe has contributed a disproportionately large share of unskilled urban labourers. Of course, in this group of origins, educational, linguistic and financial handicaps were also present, but no unbiased explanation can neglect the fact that urban industries in Canada enjoyed relatively greater prosperity during the ten years preceding the 1931 Census than did agriculture and many who might have preferred agriculture were doubtless forced to take such urban jobs as were offered, and for which they could qualify. That meant for the most part unskilled labour.

Unfortunately, the origin classification is not carried through in sufficient detail to permit the use of correlation and weighing of the various influences by mathematical devices. The analysis as it stands, however, throws considerable light both on the occupational distribution of the various stocks in Canada and on the relative dependence of the various occupational groups on the several racial strains for their respective labour supplies, and when read in conjunction with other chapters in the monograph contributes materially to an understanding of the differences in behaviour of the constituent racial elements in our population.

The Proportions that Wage-Earners* Constitute of Persons with Occupations by Broad Nativity Groups.—For Canada as a whole, female wage-earners constituted a third larger proportion of all females with gainful occupations in 1931 than did male wage-earners of all males. For the females the proportion was approximately four out of five, for males only three out of five (Table XCIII). What was true of the total population was true of the Canadian born and of every immigrant group except the Asiatics where the small numbers of females involved detracts from the significance of their recorded behaviour. The conclusion, therefore, is that when females take employment outside the home they are found in wage-earning jobs to a greater extent than men.

The United States-born males with gainful occupations show the smallest proportion of wage- and salary-earners. The Canadian-born rank next; the figure for the European-born is moderately higher, that for the Asiatics materially higher, and the highest of all is that for the British-born. The range is very considerable—from one in two for the United States-born to four out of five for the British. Resident male immigrants from abroad, the United States-born excepted, are found in salary- and particularly wage-earning employments to a greater extent than are the Canadian born. The exceedingly low proportion for immigrants from the United States is the statistical counterpart of an exceedingly high percentage in agriculture and the abnormally high percentage of wage-earners among the British is associated with the converse.

Agriculturists constitute almost identical proportions of Canadian- and European-born males with gainful occupations. As a consequence the proportions of these workers who are wage-earners do not differ so much, yet the spread is sufficient to warrant the statement that somewhat larger proportions of European immigrants work for wages than of the native Canadians. This situation is to be expected. The Canadian born are more familiar with their native land and its institutions than are immigrant peoples and are probably on the average in a better financial position. More of the native Canadians, therefore, are in a position to acquire the necessary education for a profession or to make a start in some independent business, than obtains with persons born in Continental Europe. Although no distinction is made between salary- and wage-earners in the adjacent tables there are good reasons for the further belief that a larger proportion of the Canadian-born wage-earners are in the salaried classes. To the extent that this is true it would merely emphasize the evidence of the present figure with regard to industrialization and immigrant labour. There seems to be no doubt that the progress of industrialization in Canada as in the United States, has been dependent to a greater extent on immigrant than on native-born labour. Or stated more accurately, relative to their numbers, industry has drawn more heavily on European than on native sources for its supply of workers employed on day-to-day or week-to-week basis. The relatively high proportion of wage-earners among the Asiatics is associated with their concentration in the service group and the failure of agriculture to claim its due share.

TABLE XCIII.—PERSONS REPORTING GAINFUL OCCUPATIONS, WAGE-EARNERS, AND WAGE-EARNERS AS PERCENTAGE OF THOSE REPORTING GAINFUL OCCUPATIONS, BY BROAD NATIVITY GROUP AND SEX, CANADA, 1931

Nativity	Males			Females		
	Reporting Gainful Occupations	Wage-Earners	Wage-Earners as P.C. of Those with Gainful Occupations	Reporting Gainful Occupations	Wage-Earners	Wage-Earners as P.C. of Those with Gainful Occupations
Total population.....	3,261,271	2,022,260	62.00	665,859	547,837	82.20
Canadian born.....	2,130,009	1,240,888	58.25	501,901	414,542	82.50
Total immigrants.....	1,131,262	781,372	69.06	163,958	133,295	81.30
Other British born.....	551,114	435,870	79.09	98,211	86,653	87.35
United States born.....	139,197	65,354	49.11	22,570	16,463	73.55
European born.....	389,763	241,516	61.96	41,109	29,320	71.32
Asiatic born.....	49,918	34,652	69.42	854	581	60.90

As with the males, the British-born females lead in the matter of the proportion of gainfully occupied who appeared in the wage-earning classes. The Canadian born ranked second. The figures for female immigrants from the United States and Europe were considerably below those

* The term wage-earner as used in the census includes persons on salaries.

for the British and Canadian born and those for the Asiatics materially below. The fact that the Canadian born have much larger proportions in professional services—nursing and the like—seems to be the principal reason for their showing a smaller percentage of wage-earners than the British. The chief differences between the occupational distribution of the native Canadian females and that of the United States-born is that the latter have even larger proportions in professional services and almost twice the proportion in agriculture. Both of these circumstances would make for relatively smaller numbers in wage-earning employments. The proportion of immigrant females from Europe reported as having agricultural occupations of one sort or another was nearly three times that of the native Canadians, but this fact alone does not seem adequate to account for the extent of the difference in the proportions of wage-earners. Another peculiarity of the European-born females is that relatively large numbers appear in textile manufacturing and personal services. It may be that some listed under the former heading were doing hand work on their own or that the personal service group included a disproportionate number of boarding-house keepers in the less prosperous sections of our cities. Either of these possibilities would make for a reduction in the proportion of wage-earners. The same may well apply to the Asiatic females. With them, however, relatively large numbers appear in the commercial classification which for many probably means having charge—either active or nominal—of an independent commercial enterprise. A detailed study of the occupational distribution of the wage-earners by sex and nativity would assist in providing more precise explanations of the variation in the percentages but the matter does not seem of sufficient general interest to warrant further discussion here.

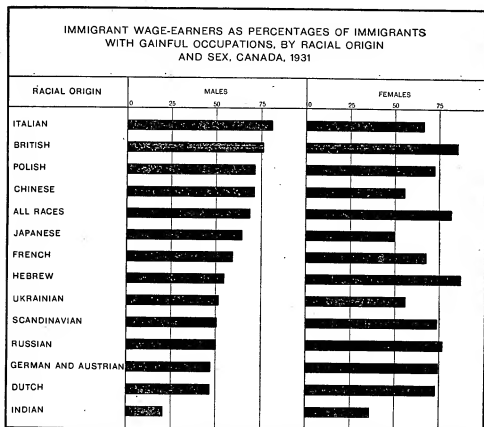


FIG. 44. The foregoing figure emphasizes the variation as between the several ethnic groups in respect of the proportions that wage-earners constitute of all persons with gainful avocations. The differences are in large measure associated with type of occupation. The chart refers to immigrant workers; no Canadian born are included.

Racial Origin of Immigrant Wage-Earners.—Table 69 and Fig. 44, show similar data for the immigrant population classified by racial origin and the same type of comment applies as was made in the foregoing section. Generally speaking, where the race is agricultural and rural the proportion of males in wage-earning occupations is low and *vice versa*. Two outstanding exceptions are the Hebrews who achieve an unusual degree of independence of employers not by engaging in agriculture but by running small personally-operated businesses. Few of the gainfully occupied Indians work for wages; they work at hunting, trapping and the like.

With only four exceptions, females working outside the home show larger proportions in the wage-earning classes than do the males. Two of the exceptions are the Chinese and Japanese to whom reference has already been made. A third is the "other" Central European group whose women are particularly heavily represented in the personal service group and the Italians where commerce and textile manufacturing claim abnormal proportions of the gainfully occupied. A wife or daughter helping a husband or father to run a small store or manufacturing establishment would probably report herself as a partner in the business, not as an employee working for wages.

Much significant information as to how the "gainfully occupied" of the different origins are distributed between wage-earning and other types of occupation can be obtained from a detailed study of the table under discussion. Such analysis is left to the interested reader.

UNEMPLOYMENT

Weeks Lost per Immigrant and Canadian-Born Wage-Earner.—Table 70 presents a number of important facts regarding the incidence of unemployment during the twelve months preceding the census. The adequacy of the data on the loss of time has been discussed elsewhere.* Suffice it to say here that the figures when tested are found to give a very satisfactory picture of the situation as it existed during one of the early years of the depression.

Fixing attention first on the data for all Canada, immigrant males on the average lost 1.90 weeks or 19 p.c. more time than did the Canadian-born male wage-earners. The difference between the average loss of time for the native Canadian and immigrant females was less although even here the immigrants suffered slightly more than the Canadian born. It will be shown below that the burden of unemployment as between the different classes of immigrant males was influenced somewhat by recency of arrival but more especially by the type of occupation engaged in. Some industries are far more sensitive to seasonal and cyclical fluctuations than are others and generally speaking, salaried workers are less subject to loss of time than workers by the day or the week. Such being the case it is reasonable to suppose that difference in occupational distribution was an important factor in accounting for the relatively heavier incidence of unemployment on the immigrant than on the Canadian-born section of the wage-earning male workers. Differences in birthplace, *i.e.*, in length of Canadian residence,† seems to have been only secondary.

One other point of interest is that male wage-earners of both nativities lost about twice as much time as females, a little more than twice for the immigrants and a little less for the Canadian born. How far this circumstance is attributable to differences in the types of occupation of males and females and how far to a policy of substituting cheap female labour for more expensive male services it is impossible to say with any great degree of precision. It may be that a certain amount of such substitution occurred especially where female minimum-wage laws were not in operation or were not enforced, but there is public evidence to show that in many cases where they were applied the shift was in the opposite direction—at least during the late years of the depression. On the whole, it seems probable that the replacing of male employees with females was not a major factor in explaining the greater average loss of time on the part of the former sex. On the other hand, a careful comparison of the occupations of the two sexes coupled with the overwhelming weight of occupational distribution in accounting for the differences in loss of time as between the several classes of male immigrants and the employed male population of the province of residence† leaves little doubt that dissimilarity in the types of male and female employments was the major cause of greater unemployment among the males.

This table also throws light on the relative incidence of unemployment as between provinces. In this respect the figures for the females show the greater consistency. They indicate that loss

* 1931 Census Monograph *Unemployment* by M. C. MacLenn, A. H. LeNeveu, W. C. Tedford and N. Keyfitz.

† See subsequent correlation.

of time was heaviest in the provinces west of the Lakes, with one important exception, *viz.*, that of Ontario. It declined generally on passing eastward to the Atlantic coast. In Nova Scotia where the mining and fishing industries are important and in New Brunswick with its large logging and lumbering interests unemployment among males was on a par with that in the Western Provinces generally. Immigrant males suffered relatively more heavily in Ontario than in Quebec while Canadian-born lost more time in the latter province. Wage-earners of both sexes and both nativities showed the greatest loss of time in British Columbia with its large logging, lumbering, mining and fishing industries, and the least in Prince Edward Island. In the Prairie Provinces, unemployment was at a maximum in Manitoba and at a minimum in Saskatchewan.

Male Unemployment among Immigrants of Specified Racial Origins.—Male immigrants of foreign European races lost about twice as much time per male wage-earner as did the Anglo-Saxons (Table 71). The Eastern Europeans as a group lost most—an average of 19·63 weeks as against 9·09 for the British. The figure for the Central Europeans was almost as high as that for the Eastern Europeans. The loss was greatest for "other" Central Europeans (22·26 weeks), "other" Eastern Europeans (20·14), the Ukrainians (20·12), Poles (19·68) and Russians (17·16). It was smaller for the Italians (15·45), Scandinavians (14·21), Chinese (14·17) and Germans and Austrians (13·39). The Hebrews, the Dutch and the Japanese were more fortunate than other foreign races. Their loss was even less than that of the French, which only exceeded that of the Anglo-Saxons by a week and a half (Fig. 45).

The reasons for these differences must be explained in terms of length of residence, geographical distribution and, for reasons shortly to be demonstrated, in terms of occupation. Occupational distribution of course, shows significant variation as between the several provincial divisions and is probably the most important single cause of the differences in average loss of time in different parts of the Dominion.

Table 70 permits of interprovincial comparisons freed from the influence of nativity. Table 71 makes possible the same type of comparison freed from the influence of race. Prince Edward Island shows only a fraction of the all-Canada average loss for every origin for which data are given. In Nova Scotia the British, French and all but five numerically unimportant foreign races experienced a greater number of weeks loss than the Canadian average. Except for the French and "other" Central European, New Brunswick appears to have been relatively favourably situated in respect to steadiness of employment. The same applies to the Anglo-Saxons and French in Quebec and to all but one or two foreign races. Loss of time was greater in Ontario than in Quebec in all but three of the less important origins. In Manitoba the situation was mixed. The Anglo-Saxons and the French lost less than the Canadian average but the foreign races generally lost more. Save in the case of the French and Dutch, the Saskatchewan figures were universally lower than those for the Dominion as a whole. In Alberta the British, Dutch, Italians and Japanese lost fractionally more than the Canadian average; all other races lost less. Loss of time through lack of employment was heaviest of all in British Columbia; what is true of the province as a whole applies to all but four or five individual origins whose numerical strength in the province was relatively small. Clearly the loss of time suffered by male wage-earners during the year immediately preceding the census varied considerably as between the different sections of the Dominion. Even within each province marked differences appeared in the incidence of unemployment as between the several origin groups. These differences find their explanation in terms already mentioned in discussing the cross-classification by nativity.

Loss of Time and Date of Arrival of Immigrant Wage-Earners.—In Table XCIV the incidence of unemployment is related to date of arrival of male and female wage-earners. For the males, by far the highest proportion losing time was among immigrant arrivals during the boom years, 1926-29. More than five and a half out of every ten wage-earners in this group lost some time during the year immediately preceding the census and the *average* loss of time for these suffering unemployment amounted to something over 6·5 months. The height of these figures is appalling. Fewer of the earlier immigrants and fewer of the more recent immigrants were unemployed at some time during the year although in no case was the proportion under 43 p.c. The duration of unemployment was also appreciably smaller for the earlier arrivals. While somewhat smaller proportions of those who came during 1930 and the first half of 1931 failed to get steady work, those who did fail were employed slightly less regularly than even the 1926-29 arrivals.

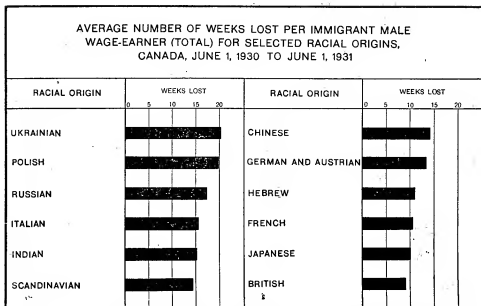


FIG. 45. Occupational distribution, age and length of Canadian residence account for a good deal of the variation in time lost as between immigrant wage-earners of the several racial origins. Since the depression was felt more heavily in some sections of Canada than in others, geographical distribution was doubtless also a factor. Single males are usually discharged before married men with dependents; immigrant groups with large surpluses of males might be expected to suffer more loss of time during a period of economic stress. Relative efficiency or inefficiency must also be taken into consideration. A complete explanation of the differences is difficult; there is no question, however, about their magnitude.

TABLE XCIV.—PERCENTAGES LOSING TIME OF IMMIGRANT WAGE-EARNERS 10 YEARS OF AGE AND OVER, AND AVERAGE NUMBER OF WEEKS LOST PER WAGE-EARNER AND PER WAGE-EARNER LOSING TIME, BY DATE OF ARRIVAL AND SEX, CANADA, JUNE 1, 1930-JUNE 1, 1931

Date of Arrival	P.C. Losing Time		Average Weeks Lost per			
			Wage-Earner		Wage-Earner Losing Time	
	Males	Females	Males	Females	Males	Females
1930-31.....	45-70	23-70	12-69	4-97	27-77	20-98
1929-29.....	55-95	24-51	15-35	4-79	27-45	19-17
1921-25.....	47-73	27-91	11-57	5-64	24-25	20-19
1911-20.....	43-45	27-55	10-65	5-74	24-52	20-83
Before 1911.....	43-20	24-56	10-87	5-30	25-13	21-56

With females, the situation was somewhat different. The maximum percentage losing time occurred among those who came to Canada between 1911 and 1925. The recent arrivals suffered least. The actual loss per person losing time did not vary greatly from an average of about 5 months although the tendency seems to have been for increases to occur with length of Canadian residence. The two rows of figures taken together suggest that with the females, age was relatively more important than were occupational differences associated with length of Canadian residence. This circumstance is in striking contrast with the subsequent findings with regard to the reasons for unemployment among male immigrants. Of course, it is doubtless true that the basic reason for higher unemployment generally among males than among females is one of difference in occupational risk, to which must be added perhaps some slight tendency to switch from more expensive male to less costly female labour in response to the economic pressure to lower costs. The fact remains, nevertheless, that as between females of different dates of arrival youth seems to have been at a premium and occupational differences appear to have been of relatively small moment. At any rate, the young were more successful in holding their jobs and, if anything, lost slightly less time.

Correlation Between Loss of Time for Male Immigrants and Related Factors.—An attempt is made in this section to explain, in terms of a selected number of associated circumstances, why some male immigrant wage-earners lost more time than others; or put in an other way, to determine what conditions were favourable and what conditions were unfavourable to unemployment, and their relative importance. The findings are obviously of wider application than to the immigrants because it is reasonable to suppose that circumstances which explain differences in regularity of employment among foreign-born wage-earners would apply to a greater or less degree to the native Canadian population:

The problem took the form of relating the average loss of time for the British, United States, European and Asiatic male immigrants to that of wage-earners as a whole in the province of residence, and comparing the differences in regard to unemployment with other measurable differences in the situation. By focussing attention on variations in behaviour from that of the male wage-earning population as a whole in the province of residence, such differences in the incidence of unemployment as were of a purely geographical origin were eliminated as well as possible differences in the relative weight of unemployment in the several parts of the Dominion arising out of variation in industrial structure or the unequal effects of national trade and tariff policies.

The dependent variable, therefore, was taken as the average number of weeks lost per male wage-earner of each nativity, expressed as a percentage of that lost by all male wage-earners in the province of residence. There being nine provinces and four broad nativity groups, a series of thirty-six ratios was thus obtained. Only thirty-five were used, however, the Asiatics in Prince Edward Island being omitted because of the smallness and hence unrepresentative character of the sample. These ratios were related to corresponding figures giving (1) the median length of Canadian residence of the several immigrant groups, (2) an index of occupational distribution from the standpoint of comparative liability to unemployment, (3) an index of comparative age distribution of the male population 10 years and over from the standpoint of liability to loss of time on the part of the wage-earning classes, (4) an index of comparative age distribution of all males 10 years and over from the standpoint of liability to having a gainful occupation and hence being subject to the risk of unemployment. In all cases the comparison was made between the nativity in a given province and the corresponding male population in the province as a whole.

A multiple correlation was worked out and a coefficient of $R = .7738$ was obtained and tested for reliability. The result indicates that the associated variables accounted for 60 p.c. or three-fifths of the fluctuations* in the dependent variable (Fig. 46). The following regression or prediction equation was obtained:—

$$X_1 = - .2769 X_2 + .9259 X_3 + .4856 X_4 + .8739 X_5 - 150.36$$

where X_1 = average number of weeks lost per male wage-earner of specified nativities as a percentage of the average number of weeks lost per male wage-earner in the total population of the province of residence between June 1, 1930 and June 1, 1931;

X_2 = median length of Canadian residence for wage-earners of specified nativities in the different provinces;

X_3 = index of occupational distribution of wage-earners of the several nativities from the standpoint of risk of unemployment as compared with that of the "occupied" male population in the province of residence;

X_4 = index of age distribution of males 10 years and over of the several nativities from the standpoint of liability to loss of time on the part of the wage-earning classes of the nativity as compared with that of the male population 10 years and over in the province of residence;

X_5 = index of age distribution of the male population 10 years and over of the several nativities from the standpoint of liability to having a gainful occupation (and hence being subject to unemployment) as compared with that of the male population 10 years and over of the province of residence.

* Or stated more accurately, "of the variability", i.e., of the squares of the deviations from the arithmetic mean.

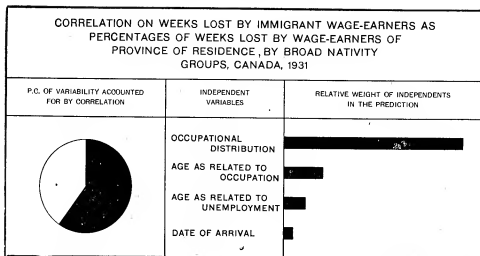


FIG. 46. The four independents included in the correlation accounted for 60 p.c. of the variability in the amounts by which the loss of time suffered by immigrant male wage-earners of the different nativity groups differed from that of male wage-earners as a whole within the province of residence. The type of occupation rather than date of arrival appears to be the determining factor although there may well be a causal connection between recency of arrival and heavy representation in the occupations peculiarly exposed to the risk of unemployment.

An examination of the equation indicates that, other things being equal, every increase of one year in the length of Canadian residence of the immigrant male wage-earner decreases the expected average yearly loss of employment by .2769 weeks. In other words, on the basis of the experience of the year immediately preceding the census, if other things remained equal in all respects, one would expect immigrant wage-earners who arrived in 1929 to have experienced on the average 2.769 more weeks of unemployment between June 1, 1930 and June 1, 1931 than did those who arrived in 1919, and the latter in turn to have lost 2.769 more weeks employment than wage-earners who arrived ten years earlier, i.e., in 1909. This result is quite in accordance with expectation on at least two counts: first, the older immigrants have had greater opportunity to become firmly established and to acquire seniority rights where such are important, and second, time has permitted most of the earlier immigrants who had been less successful in adapting themselves to Canadian economic conditions to return to their native land or at any rate to withdraw from the country. Only the most successful tended to remain. The indices of age and occupational distribution are all positively associated with X_1 because each was expressed in such a way as to increase as the liability to unemployment increased.

Both in the correlation and the prediction equation, occupational distribution appears as the dominant factor. When the standard deviations of X_1 , X_2 , X_3 , X_4 and X_5 are substituted in the regression as was done in previous cases it is found that the relative weights of the independent variables in contributing to actual fluctuations in the dependent were on the average as follows:—

RELATIVE SIGNIFICANCE OF THE FOUR VARIABLES IN THE PREDICTION

Variable	Weight
X_3 (occupational distribution).....	100
X_4 (age as related to occupation).....	22
X_5 (age as related to unemployment).....	12
X_1 (date of arrival).....	5

These figures are illuminating. Occupational differences are over two and a half times more important in the prediction than age and date of arrival combined. Differences in occupation and age together account for almost 97 p.c. of the fluctuations in X_1 in so far as these fluctuations can be accounted for by the independent variables included in the present correlation. The individual nativities experience greater or less loss of time than the wage-earners as a whole in

the province of residence, principally because they were engaged in occupations or types of work where the risk of unemployment was greater or less than the average obtaining in the province. That is, they were associated with industries subject to greater or less seasonal and cyclical fluctuations in activity or were doing grades of work subject to greater or less risk of unemployment or both.

It is instructive to compare the relative weights of the independent variables in the simple and multiple correlations and the prediction. The simple correlation shows the association with unemployment as it actually exists but as with all simple correlations this association is apt to be attributable, in part at least, to other associations that are common to both. In this case the chief common term is occupation, i.e., recency of arrival is associated with unemployment because it is associated with occupation and occupation in turn is associated with unemployment. It is clear from the following table that *the recent arrivals suffered heavy unemployment not so much because they were recent arrivals but because they went or were forced through lack of training or the absence of alternative employments into occupations where the risk was great.* The relative weight of date of arrival in the simple correlation was 32 as compared with 100 for occupation; in the multiple it fell to 3, occupation being taken as 100 as in the former comparison.

RELATIVE SIGNIFICANCE OF THE FOUR INDEPENDENT VARIABLES IN THE (1) SIMPLE CORRELATION (2) MULTIPLE CORRELATION AND (3) PREDICTION

Variable	Weight		
	Simple	Multiple	Prediction
X ₃ (occupational distribution).....	100	100	100
X ₂ (age as related to occupation).....	12	4	22
X ₄ (age as related to unemployment).....	3	4	12
X ₁ (date of arrival).....	32	3	5

The relative influence of the several independents in the prediction is, of course, greatly affected by the relative magnitudes of their inherent variability.

TABLE XCV.—EXPECTED LOSS OF EMPLOYMENT FOR IMMIGRANT MALE WAGE-EARNERS AS PERCENTAGE OF THAT FOR ALL MALE WAGE-EARNERS, BY NATIVITY GROUP AND PROVINCE OF RESIDENCE, CANADA AND PROVINCES, JUNE 1, 1930-JUNE 1, 1931

Province	Expected Loss of Employment for Immigrant as P.C. of that for All Wage-Earners for			
	British Born	United States Born	European Born	Asiatic Born
Prince Edward Island.....	87	94	90	58
Nova Scotia.....	129	77	187	68
New Brunswick.....	77	78	102	60
Quebec.....	100	93	152	62
Ontario.....	104	79	149	87
Manitoba.....	100	83	122	77
Saskatchewan.....	104	83	110	90
Alberta.....	112	69	113	88
British Columbia.....	80	72	119	108
Average.....	99	81	127	78

Take, for example, the figures for Ontario. On the basis of existing occupational distribution, age and date of arrival, the expectation was that male immigrant wage-earners from the United States would lose some 21 p.c. less time than the male wage-earners of the province as a whole. In other words, they were 21 p.c. more favourably situated from the standpoint of avoiding loss of employment, than were male wage-earners generally in that province. The European born, on the other hand, because of less advantageous occupational and age distribution and more recent arrival might expect on the average to suffer almost half again as much unemployment as the typical wage-earner in the province, or were one-third less advantageously situated from the standpoint of avoiding loss of employment. What is the explanation of these differences? In the first place as compared with the European immigrants, the United States born on the average had 18.2 years of Canadian residence as against 7.0 for the European born in that province. Besides, their occupational risk of unemployment was over a third less than that of the Continental

European wage-earner. That means that the United States born were more concentrated in salaried jobs in relatively stable industries like those producing or marketing consumers' goods while the Europeans to a greater extent were attached to industries like construction and iron and steel manufacture, etc., which suffer wide fluctuations in activity and/or were working to a greater extent on a day-to-day or week-to-week basis as unskilled labourers. The occupational difference was the determining one but on top of it, the age distribution of the United States-born wage-earners and of the male population generally was much less favourable to loss of employment. And so the table may be analysed. The position of the British-born was intermediate on these four counts, and that of the Asiatics was exceptionally favourable to steady employment.

In the average province on the basis of existing occupational and age distribution and after due allowance is made for length of Canadian residence, British male immigrant wage-earners might be expected to lose, on the average, in the neighbourhood of 1 p.c. less time through unemployment than wage-earners generally in the province of residence, the United States born 19 p.c. less, the Asiatics 24 p.c. less and the European born 27 p.c. more. For reasons presently to be explained the above figures are only approximations but after making every reasonable allowance for their approximate character it is obvious that the differences are both large and significant.

There remains one further comparison—that of the actual with the expected. The data may be presented most conveniently in a table similar to the preceding one.

TABLE XCVI.—ACTUAL AS PERCENTAGE OF EXPECTED LOSS OF EMPLOYMENT FOR IMMIGRANT MALE WAGE-EARNERS, BY NATIVITY GROUP AND PROVINCE OF RESIDENCE, CANADA AND PROVINCES, JUNE 1, 1930-JUNE 1, 1931

Province	Actual Loss of Employment for Immigrant Wage-Earners as Percentage of Expected Loss for			
	British Born	United States Born	European Born	Asiatic Born
Prince Edward Island.....		103	48	—
Nova Scotia.....	61	105	89	107
New Brunswick.....	84	118	102	73
Quebec.....	62	88	104	77
Ontario.....	87	103	117	101
Manitoba.....	69	95	130	165
Saskatchewan.....	71	114	125	81
Alberta.....	74	128	127	113
British Columbia.....	106	132	118	110
Average.....	78	100	118	104

While considerable variation exists in the behaviour of the figures for the several nativities as between the different provinces, the data indicate that in the average province the actual difference between the loss of time for the British born and that for the population as a whole was only 78 p.c. of expectation. With the Asiatics it was 104 p.c. of expectation, with the United States born it was 109 p.c. and with the European born 118 p.c.

Now it may be objected that both the actual and expected losses were expressed in terms of a denominator in which the wage-earners of the given nativity were included, i.e., in terms of all wage-earners in the province. If a given nativity were numerically large the difference between its behaviour and that of workers in the province generally would tend to be minimized by virtue of the fact that the nativity in question was heavily represented in the population of the province as a whole, a circumstance which would tend to make the provincial figure conform more closely to its own. Conversely, other things being equal, the difference would tend to be larger the smaller the representation of the nativity group in the provincial total. Hence, any comparison of the actual figures of a given nativity in one province with those in another province would be influenced to some extent by the varying proportions of that nativity in the populations of the provinces compared.

The same objection applies to the preceding comparison of the expected values for a given nativity in two or more parts of the country and it was on that account that emphasis was laid on the approximate character of the results. In that comparison, however, the error tended to

be reduced by virtue of the circumstance that although the expectation was derived from data which individually were related to provincial totals of which they constituted a part, the relationship from which the expected percentages were computed was an average relationship.

In comparing the actual with the predicted as is done in the immediately preceding table, the error would seem to be reduced to a minimum because while the actual is derived from a comparison of loss of employment in a given nativity with that of the appropriate provincial population of which it forms a part, the expected is derived from a series of associated nativity data, three out of four of which are likewise expressed in terms of the extent to which the corresponding provincial population is possessed of the given characteristic whether it be occupational distribution or age in one form or another. In other words the actual and the expected are derived from the same type of basic material and while they are based on different population characteristics the error in the one is of the same nature and direction as the error of the other and is very likely to be of the same approximate extent following as it does from a similar mechanical cause. Considerable dependence, therefore, may be placed on the latter comparison, remembering, of course, that the weights given to the various independent variables used in computing the predicted values are average weights based on the experience of the whole thirty-five individual nativity groups entering into the correlation.

Deviations of the actual from the predicted may arise from two sources: first, from eccentric behaviour of a given nativity with respect to one or more of the several characteristics included in the correlation which behaviour, when given the average weight as measured by the various coefficients in the equation, may unduly raise or lower the expected value; and second, from peculiarities associated with the nativity but not included in the correlation.

The only way to determine whether the figure for a particular nativity shows a marked deviation from expectation in a given province because of exceedingly abnormal occupational or age distribution, date of arrival or other distinctive characteristics peculiar to the group, is to examine the figures used in the correlation as shown in Table 72. A good deal of interesting information as to the differing behaviour of the figures for the individual nativities in the several provinces may be obtained in this way. The pursuit of the study in this direction is left to such readers as may be interested.

In the averages for the nine provinces, however, one has a summary figure for each nativity which in the nature of the case should be largely free from provincial eccentricities. Furthermore, an inspection of the data suggests that by and large the deviations of the actual from the expected are in the main attributable to causes outside the equation. Take the European born, for example. They are characterized on the average by unusually recent arrival, unusually risky employment and unusually favourable age distribution from the standpoint of loss of time through unemployment. All these circumstances would tend to raise the expected to an abnormally high figure. Yet it is in this nativity that the actual shows the greatest excess over expectation. Or consider the Asiatics. In so far as the characteristics included in the equation are abnormal, their average length of Canadian residence was high and they were engaged in occupations exposed to unusually small risk of unemployment. These extreme deviations from average would tend to lower the expected unduly in so far as they distorted the prediction at all, so that the actual would exceed the expectation; yet the excess above expectation was found to be lower than that for either of the other foreign nativities. There appears to be nothing in the figures for the British or United States born to account for the spread between the actual and the expected values as obtained by the equation. Moreover, there were no gaps in any of the variables of sufficient magnitude to cause meaningless deviations or adherences of mechanical origin.

The conclusion, therefore, seems warranted that factors peculiar to those nativities and not included in the present correlation accounted for the British male immigrant wage-earners suffering materially less loss of time than might be expected on the basis of their respective lengths of Canadian residence and their occupational and age distributions, while other and probably different extraneous characteristics caused the Asiatic born to lose slightly more time than was expected, the United States born moderately more time than was expected and the European born a great deal more. The European born were, of course, under the possible handicap of having a deficient knowledge of the official languages of Canada and of Canadian customs and it may well have been that when it came to laying off hands, the Canadian-born employer discriminated against the foreign born in favour of the Canadian. The latter cause may be a partial

explanation of the moderate margin of loss over expectation on the part of the United States born. In other words, they suffered more merely because they were foreign born. It seems more reasonable to suppose, however, that they were discharged because relatively fewer were married men with dependents and the general average of efficiency was lower. The same type of reasoning would apply to the Asiatics. In their case, however, many wage-earners are employed by persons of their own nativity. A minority group in a foreign land tends to care for its own and such employers would naturally be loth to discharge a compatriot especially if there were no alternative employment available and the worker were willing to accept greatly reduced wages in order to retain his job. This circumstance would tend to offset the forces making for heavier incidence of unemployment among the foreign born in general. The British born would naturally stand in a more favourable position than either the European or United States born if it came to a question of reducing staff or going on short time. Indeed, in so far as the Old Country artisan or clerk were more thoroughly trained or more skilful than the native Canadian he would have an advantage even over the native born in this regard. The deviations from expectation thus lend themselves to plausible explanations. It is not suggested that the above are by any means exhaustive or even the most important. They have been put forward merely to indicate the type of explanation which must be applied to that portion of the fluctuations (40 p.c.) which remained unaccounted for by the correlation.

CHAPTER XIII

FERTILITY, INFANT MORTALITY, DEAF-MUTISM AND BLINDNESS

FERTILITY OF THE PEOPLES OF CANADA

Natural increase is a subject of first importance in any study of population. This is especially true in Canada, where the population is composed of many diverse elements. Immigration brings new stocks into the country. These stocks reproduce. At first the yearly influx of immigrants may keep pace with or exceed the additions by natural increase. It is only a matter of time, however, before the annual number of births becomes greater than the annual increase through immigration. If immigrant stocks reproduce more rapidly than the basic stocks of the country, they must eventually outnumber them. How soon that condition will come about depends on (1) the number of immigrants in the first instance, (2) the numbers immigrating each year and (3) the difference in the fertility rates. It is immaterial whether the general level of the rates of reproduction be high or low. So long as differences in the rates exist, the population structure changes. Such changes are much more rapid than is commonly supposed.

The 1931 Census makes available for the first time complete cross-classifications of females by marital condition, race and age. These data together with associated figures on births from the vital statistics reports permit a directness, precision and conclusiveness hitherto unobtainable in studying the relation of race and fertility.*

Table 73 shows the mean number of births by racial origin of mother for the years 1930-32 in Canada and crude rates in terms of all women 15-44 years of age. Table 74 presents the same material with rates based on married females. The averages for the three years centering on the census were taken as being more representative than figures for the census year alone. By this means it was possible to derive rates on a sample of some 720,000 instead of the 240,000-odd births of a single year.

The first point to note is the relative numbers of children that the more important racial groups are currently contributing to the population of Canada. These figures have added significance when compared with the proportions that the corresponding origin groups as a whole constitute of our total population.

TABLE XCVII.—MEAN NUMBER OF BIRTHS, 1930-32, BY BROAD RACIAL ORIGIN GROUP AND PERCENTAGES BIRTHS FORM OF TOTAL BIRTHS, AND ORIGIN FORMS OF TOTAL POPULATION, CANADA, 1931

Racial Origin Group	Mean Annual Births, 1930-32	Percentage of Total Births	Proportion Origin Constitutes of Total Population
Total.....	239,878	100.0	100.0
British.....	97,447	40.6	51.9
French.....	93,394	38.9	28.2
Foreign European ¹	41,888	17.5	17.6
North Western.....	19,681	8.2	8.5
South, Eastern and Central.....	19,615	8.2	7.5
Asiatic.....	1,325	0.6	0.8
Indian.....	3,406	1.4	1.2

¹Includes Hebrew and "Others".

The British races which represented 51.9 p.c. of the Canadian population in 1931 accounted for only 40.6 p.c. of the births; the French with 28.2 p.c. of the total population contributed 38.9 p.c. The Anglo-Saxon births were thus some 22 p.c. fewer than expectation on the basis of their numerical importance in the population as a whole and the French exceeded expectation by 38 p.c. on the same basis. Save for the Asiatics who are numerically the smallest in the table, births for the other groups varied much less from expectation than did those of the dominant Canadian stocks despite their having distinctly unfavourable sex distribution. That, of course, does not apply to the North American Indians.

* See also 1931 Census Monograph *Fertility of the Population of Canada* by W. R. Tracey.

These figures reveal much as to the prospective racial composition of the population. If the differential fertilities of the principal origins in Canada continue at anything like the present levels, British races before long will constitute a rapidly decreasing minority and other races a rapidly increasing majority of the Canadian population. Disproportionately heavy immigration of Anglo-Saxons from abroad would, of course, retard the decline in the relative importance of that origin while disproportionately heavy emigration (which takes place at the ages of highest fertility) would hasten it. Non-Anglo-Saxon races are already contributing almost 60 p.c. of the gross additions to the Canadian population, by birth. They are contributing an even larger proportion (70-75 p.c.)* of the *net natural increase* because their age distribution, for the time being at least, is peculiarly favourable to low mortality. Change in ethnic structure is, of course, cumulative and the rapidity with which the two series of population growth diverge increases with the passage of time in the absence of offsetting influences such as immigration or changes in differential birth and mortality rates. On the present basis of natural increase, it will be only a few decades until the French are numerically the largest race in Canada and a few generations until foreign European races will outnumber the Anglo-Saxons.

Table XCVIII arranges the two sets of fertility rates according to rank and gives comparative figures for the principal geographical and linguistic racial groupings. The rates on the left side of the table are in terms of all women 15-44 irrespective of marital condition and differ from those on the right by virtue of the latter being based on married women only. The rates based on all women are naturally much lower than those in terms of married women and the varying magnitudes of the spreads between the two sets of figures for the several races reflects among other things differing marital status which was discussed in a previous chapter (Chapter III).

*A reasonable estimate for the decade 1931-41 is 73 p.c.

TABLE XCVIII.—FERTILITY RATES IN TERMS OF (1) ALL WOMEN 15-44 YEARS OF AGE AND (2) MARRIED WOMEN 15-44 YEARS OF AGE, RANKED ACCORDING TO SIZE OF RATES, FOR SPECIFIC RACIAL ORIGINS AND GROUPS OF RACES, CANADA, 1931

Racial Origin	(1) Births per 100 Women 15-44 Years		Racial Origin	(2) Births per 100 Married Women 15-44 Years	
	Rates	Index		Rates	Index
Total.....	10.4	100	Total.....	18.9	100
Yugoslavia.....	21.2	204	French.....	29.3	155
Japanese.....	18.6	179	Chinese and Japanese.....	24.0	127
Chinese.....	16.0	154	Ukrainian.....	21.7	115
Hungarian.....	15.7	151	Indian and Eskimo.....	20.6	109
Czech and Slovak.....	14.9	143	Czech and Slovak.....	20.5	108
Indian.....	14.8	142	Hungarian.....	20.5	108
French.....	14.3	138	German.....	20.0	106
Ukrainian.....	14.1	136	Italian.....	18.9	100
German.....	11.7	113	Polish.....	17.5	93
Italian.....	11.6	112	Scandinavian.....	16.2	86
Polish.....	11.4	110	Austrian, n.o.s.....	15.5	82
Norwegian.....	10.4	100	Russian.....	15.3	81
Roumanian.....	10.1	97	Irish.....	14.9	79
Austrian, n.o.s.....	9.9	95	Roumanian.....	14.7	78
Danish.....	9.7	93	English.....	14.3	76
Negro.....	9.7	93	Belgian.....	14.1	75
Belgian.....	9.6	92	Scottish.....	13.9	74
Russian.....	9.4	90	Dutch.....	13.7	73
Swedish.....	9.0	87	Finnish.....	12.3	65
Icelandic.....	8.8	85	Other British.....	10.5	56
English.....	8.4	81	Hebrew.....	9.7	51
Dutch.....	7.9	76			
Irish.....	7.8	75			
Scottish.....	7.6	73			
Finnish.....	7.3	70			
Other British.....	6.0	58			
Hebrew.....	4.9	47			
Asiatic.....	15.2	146	French.....	29.3	155
French.....	14.3	138	Asiatic.....	22.2	118
Foreign European.....	10.5	101	Foreign European.....	17.3	92
British.....	8.0	77	British.....	14.3	76
South, Eastern and Central European.....	12.0	115	South, Eastern and Central European.....	18.4	97
North Western European.....	10.5	101	North Western European.....	17.8	94
Slavic.....	12.4	119	Slavic.....	18.9	100
Latin and Creek.....	11.3	109	Germanic.....	18.4	97
Germanic.....	10.8	104	Latin and Creek.....	17.9	95
Scandinavian.....	9.7	93	Scandinavian.....	16.2	86

* Includes "Other Asiatic."

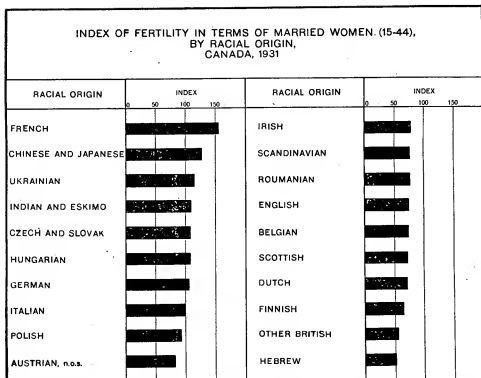


FIG. 47. In the above index the rate for the total population is taken as 100. The Canadian population is very heterogeneous in the matter of fertility. The effect of this heterogeneity on the ethnic structure of the population will be cumulative. Between 1930 and 1932, Anglo-Saxons contributed 40.6 p.c. of the total additions by birth, French 38.9 p.c. and foreign races 20.5 p.c. Non-Anglo-Saxons thus accounted for nearly 60 p.c. of the total.

For purposes of clarity such descriptive comments as are made will be based on the index of rates on married women as shown in the last two columns. It will be seen that the fertility of married women of French origin is some 55 p.c. greater than the average for the population as a whole and that of the Asiatics, 18 p.c. greater, while those for the foreign European origins as a whole are some 8 p.c. less and for the British 24 p.c. less (Fig. 47). Those for the geographical and linguistic groups range from 0 to 14 p.c. below the general average. The differences may be even more easily appreciated when the index is adjusted so that either the highest or the lowest is taken as 100. The figures so arranged with that for the Anglo-Saxons as a base are as follows:—

TABLE XCIX.—INDEX OF FERTILITY OF MARRIED WOMEN 15-44 YEARS OF AGE, IN TERMS OF BRITISH RATE, BY GEOGRAPHICAL AND LINGUISTIC GROUPING OF RACIAL ORIGINS, CANADA, 1931

Racial Origin Group	Index
French.....	205
Asiatic.....	155
Foreign European.....	121
British.....	100
South, Eastern and Central European.....	129
North Western European.....	129
Slavic.....	124
Germanic.....	129
Latin and Greek.....	125
Scandinavian.....	113

A glance at the above indices can not fail to impress one with the tremendous heterogeneity of our Canadian population in the matter of fertility. French married women are more than twice as fertile as the British; Asiatics half again more fertile than the British, and foreign European races as a group about one-fifth more so. The foreign European groups of origins show fertility rates from 24 to 32 p.c. higher than the Anglo-Saxons with the single exception of the Scandinavians where the difference is only 13 p.c. Of all peoples the Scandinavians conform most closely to the general level of the Anglo-Saxon races.

Correlation between Fertility and Related Variables.—In the above discussion and in the related tables no account was taken of differences in age distribution. Generally speaking, young married women are considerably more likely to give birth to children than women in the later years of the child-bearing period. Consequently, the differences in fertility rates are in a measure the results of differing age distributions of the married women in the respective origins. Obviously the latter must be taken into account in any explanation of those differences. A multitude of other more or less extraneous factors must also be considered. Many of such possible influences are not subject to statistical measurement and many others can not be expressed in statistical form suitable for inclusion in a correlation. Consequently, in attempting to discover and evaluate the influence of associated variables, one's choice necessarily is subject to definite limitations.

In the present study five such series were selected including age. Separate figures were computed for seventeen white races in the five provinces from Ontario west, making a total sample of eighty-four cases. The Russians in British Columbia were omitted because they are largely Doukhobors with a distinctive culture of their own. The French were not included since it was found in a preliminary correlation based on figures for all provinces combined that their exceedingly large proportion North American-born introduced an extreme variant into the correlation which reduced its reliability. Figures for the province of Quebec were not used because of the relatively small representation of many of the individual non-French races in that province which seriously affected the reliability of fertility and other rates based thereon. The Maritimes were excluded for similar reasons.

For the first independent variable, an index of the degree to which the age distribution of all women 15-44 was more or less favourable to high fertility was worked out for each of the seventeen racial groups in each of the five provinces. The basis of comparison was the age distribution of the female population of Canada as a whole—the standard million. The second independent was the percentage of women 15-44 in each origin married; the third was the proportion of the race North American-born (Canada and the United States) which had been previously used as a crude index of length of Canadian residence; the fourth was the percentage of females (20 years and over) urban, and the fifth the percentage of the race (10 years and over) illiterate.

The coefficient of correlation worked out to $R = .65 \pm .0303$. The coefficient though only moderate in size is very reliable being more than twenty-one times the probable error. That it was not higher is significant, especially in view of the fact that on the basis of three of the independent variables included in the present analysis a coefficient of $R = .88 \pm .05$ was obtained from a similar computation using 1926 data for the Prairie Provinces as a whole. The principal difference in the two cases seems to be that the one was derived from a composite study of a relatively homogeneous social and economic area, all major sections of which tended to be subject to much the same general economic forces affecting its prosperity. Moreover, the population in the area was characterized by a more or less uniform economic stratification and occupational distribution. In the present correlation, two quite different areas are introduced, Ontario and British Columbia, where the industrial structures and consequently the occupational distribution of the population differs radically from that on the Prairies and where the figures on unemployment indicate that in the one instance the depression was felt much less severely and in the other considerably more so than in the Prairie region. The conclusion, therefore, seems to be warranted that these and allied causes accounted for at least a major portion of the difference between the coefficient of .88 and .65. It may also be that the separate treatment of the five provinces introduced a somewhat higher degree of religious heterogeneity in the case of one or two races like the German and Dutch, but if such be so the fact that it could have obtained for only a very few origins points to the conclusion that it was a relatively unimportant factor in the difference. The same conclusion seems warranted as to the possibility of greater racial heterogeneity

as between the provincial samples of the same "census" race. If these assumptions be correct it would seem to follow that differences in economic and physical environment, occupational distribution and the like were about four-fifths as important in explaining differences in fertility as were the five independents combined, in the 1931 correlation. The square of the coefficients indicates that in a more or less homogeneous environment 77 p.c. of the differences in fertility were associated with the selected independent variables; in the more heterogeneous environment included in the present correlation the same and one additional variable combined accounted for only 42 p.c. of the differences.* The spread was 35 p.c. Such circumstances then appear to have an effect on fertility somewhat greater than all residual factors put together and materially greater than any individual factor included in the correlation.

This finding is not at variance with the results of other studies on fertility. Regional investigations have shown that fertility tends to be higher among persons in the lower economic strata and in certain well defined occupations than in others and that straitened economic circumstances greatly reduce not only the marriage rate but the births to married women especially in the middle and upper economic classes of society. In a large area differing radically in industrial and social organization and in sensitiveness to depression conditions it is not surprising, therefore, to find such differences assuming a place of major causal significance in the variation in fertility of the several origins in the different sections of the country. It seems abundantly clear that the environment of the individual and particularly the economic and social environment, exerts a marked influence on fertility.

All this detracts in no way from the importance of the relationships emerging from the correlation itself. Its reliability has already been commented upon. The basic data appear in Table 75. The regression equation emerging therefrom was as follows:—

$$X_1 = .7629 X_2 - .1057 X_3 + .1519 X_4 - .4666 X_5 + .0331 X_6 - 36.0375$$

where X_1 = average number of children born 1930-32 per one hundred married females (15-44) of the several racial groups;

X_2 = index of favourableness to fertility of age distribution of women (15-44) in the several racial groups;

X_3 = percentage of women (15-44) married;

X_4 = percentage of racial group North American-born—an index of length of residence;

X_5 = percentage of females (20 and over) urban;

X_6 = percentage of racial group illiterate.

From the equation it is seen that an increase of one point in the degree of favourableness of age distribution (X_2) on the average raises the expected fertility by .7629 of 1 p.c. An increase of 1 p.c. in the proportion of females (15-44) married, lowers the expected fertility by .1057 of 1 p.c. Similarly an increase in the percentage North American-born raises the expectation, an increase in the percentage of females urban lowers it and increased illiteracy in turn raises it again.

It is easy to see how favourable age distribution and high illiteracy are positively related to high fertility. Which way the causal connection works as between illiteracy and fertility is more difficult to determine. It is logical to assume that illiteracy is a contributory cause of fertility and it seems equally logical that high fertility may in turn contribute to illiteracy. However that may be, the association between the two is clear.

Stocks showing a preference for urban life normally have lower birth rates than the more rural. As a matter of fact collateral studies have confirmed the inference from the present correlation that urban residence is less favourable to high fertility than rural. In the city the child is a far greater economic liability than in the country. Indeed, on the farm he may become an economic asset at a very early age. Furthermore, in centres of population, information as to means of controlling the size of the family might be expected to be more widely disseminated and the means are at hand. For these and other reasons it is not difficult to understand why urban residence *per se* is less favourable to high fertility than is rural.

* The reference, of course, is to the variability—the squares of the differences.

That fertility should increase with the percentage of the racial group North American-born is less easily reconciled with common ideas on the subject. The percentage of the race North American-born was used here and in former correlations as the best available crude index of length of residence of a racial group on this continent. A large percentage characterizes a group where the first, second, third, etc., generations of descendants of early immigrants constitute a large proportion of the total population of that race in the country. Other things being equal, the earlier the original immigrants came and the smaller the recent immigration, the larger will be the percentage North American-born and the longer the average length of North American residence of the racial group. But other things are not entirely equal, as was pointed out in a previous chapter. There are differences in fertility as between the different origins and high fertility in itself would tend to raise the proportion of a racial group born on this continent. Nevertheless, it is believed that this factor is not adequate to destroy the usefulness of the percentage North American-born as an index of length of residence, especially in the light of the logical manner in which it entered into the correlations on intermarriage in Chapter VII. It must be admitted, however, that the presence of a fertility component in the index assumes added importance when the correlation is with fertility itself.

The equation then does not *prove* but it *suggests* that the birth rate of immigrant people normally goes up rather than down in the second and in some cases possibly in the third generation of Canadian residence. The word "normally" is intended to imply that the statement is applicable to most immigrant stocks. The generalization is applied explicitly to immigrant stocks, because all of the groups examined have been augmented by large additions through immigration in the past twenty-five to fifty years. The presumed tendency towards higher birth rates is associated with the second generation because the percentage of most non-British and non-French resident in Canada, and more particularly in Western Canada, for three or more generations, is small. The presumption in favour of this interpretation is strengthened by the fact that when the analysis is pursued further by the method of partial and multiple correlation it becomes clear that the use of the proportion North American-born as an index of length of residence is not vitiated by a transient abnormality in sex distribution.

An impetus to the birth rate following immigration to a new country is not without historical precedent. It is reasonable to suppose that Canada is more favourable to large families than are the countries of Europe from which many of our immigrants come. Prior to 1931 at least, the pressure of population on natural resources was certainly not so great; indeed in rural districts the child is an asset. This is especially so in a growing country where agricultural labour is both scarce and expensive. A stimulus to the birth rate would also occur wherever the rise in the standard of living failed to keep pace with increased earnings. With some origins and perhaps with a greater or smaller number of persons in all origins, the potential rise in the standard of life associated with immigration to this country was realized; for others the alternative of increased birth rates and larger families appears to have been chosen. Such at any rate would seem to be a reasonable explanation of the positive relationship between high fertility and a large percentage North American-born, in so far as the latter is a measure of length of residence on the continent.

Thus far the findings closely coincide with those in the previous correlation based on 1926 figures for the Prairie Provinces. But in the present equation there is a new variable, the percentage of females 15-44 married. It will be recalled that in the correlation on conjugal condition in Chapter III a similar percentage appeared, only it was for the unmarried males. The association appearing there was that between a high percentage of males *unmarried* and a high percentage of females *unmarried*, and the suggested explanation of this association was the presence of secondary economic causes affecting both alike, prosperity reducing the proportions in both cases by making more marriages economically possible and *vice versa*. In the present case use has been made of the proportions *married* and the suggested interpretation is just the converse.

Other things being equal (*i.e.*, apart from differences in age, sex, rural-urban distribution, length of residence and illiteracy), a large proportion of females married, or as it has been interpreted, relative prosperity, appears to be associated with a low birth rate and a small percentage of females married with a high birth rate. If it be true, as it seems logical to assume, that the first years of the depression were felt less severely by the salaried and professional and allied classes

because of their stronger economic position and the conditions of their employment, the marriage rate in racial origins with large proportions of persons in such occupations would not be so seriously affected as would that in origins including disproportionate numbers of day labourers and other workers in more exposed occupations*. Now it is the former class which is most likely to have a low birth rate and, other things being equal, an origin where that type of person was heavily represented might be expected to have a large proportion married and a low birth rate under conditions existing at and preceding the last census. Conversely, in an origin in which economic classes at the opposite extreme were particularly prominent one would look for low proportions married and high fertility. Only in some such terms can the inverse association between the percentages married and fertility be explained if the proportion married be considered as of primarily economic significance in the present correlation. It may well be that that aspect is not the dominant one in its association with fertility and the meaning may simply be that in any origin group the females who are most interested in raising a family get married first. The point, however, is not important because the influence of this factor in the prediction is of relatively small weight.

When the standard deviations of the five independent variables are substituted in the regression equation as in previous instances the relative weights of the variables in the prediction equation are found to be as follows:—

RELATIVE SIGNIFICANCE OF THE FIVE VARIABLES IN THE PREDICTION

Variable	Weight
X ₁ (age).....	100
X ₂ (percentage urban).....	86
X ₃ (percentage North American-born).....	62
X ₄ (percentage of females married).....	19
X ₅ (percentage illiterate).....	4

The above figures are graphically presented in Fig. 48.

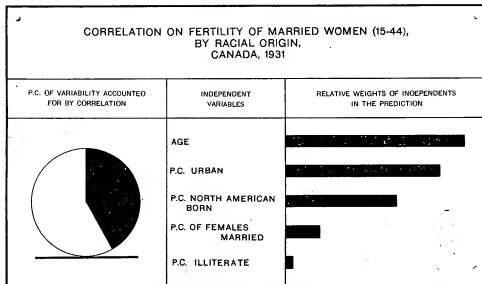


FIG. 48. Of the five independent variables, differences in age distribution are most important in accounting for fluctuations in the crude fertility rates. Urban residence is unfavourable to high fertility; long Canadian residence (on the part of immigrant stocks) seems to favour high rates; illiteracy is unimportant. The five variables combined account for only 42 p.c. of the variability in fertility as between the several origins. Environmental, occupational, religious and certain other causes more or less closely associated with race are more important than the combined influence of the five independents included in the correlation in contributing to differences in fertility as measured by the number of births to married mothers between the ages 15 and 44.

* This is substantially the argument advanced in discussing the correlation on conjugal condition in Chap. III.

Age, rural-urban distribution and percentage North American-born are the determining factors in descending order of importance. An interesting circumstance is the relative unimportance of illiteracy. In the 1926 correlation for the Prairie Provinces it was a determining factor. It is only to be expected, of course, that with the ageing of the population, especially the immigrant population, illiteracy should decline since, as was shown in Chapter X, it is concentrated in the upper age categories of the foreign born and as the population ages and the proportion of the Canadian born increases, fewer and fewer married women of child-bearing age are illiterate. That applies to all races. The inclusion of Ontario and British Columbia also would tend to reduce its importance and to this should be added the existence of a definite negative relationship between the percentages married and the percentages illiterate appearing in the correlation table. Part of the weight given to illiteracy in the earlier equation was transferred to conjugal condition in the present one.

Because of the large amount of mechanical work involved and the importance of factors not included in the equation it did not seem worth while to work out the prediction for the whole eighty-four cases in the correlation.* A sample was taken, however, from the data of Ontario, Saskatchewan and British Columbia, Ontario being the most highly industrialized of the five provinces, Saskatchewan being the typically agricultural province of the Prairie region and British Columbia having an occupational and industrial structure quite different from either of the other two. The predicted values were computed on the basis of the prediction equation and the actual expressed as a percentage of the predicted in each case. The results are arranged in convenient form in the following table:—

TABLE C.—ACTUAL FERTILITY RATES AS PERCENTAGES OF THE EXPECTED, BY RACIAL ORIGIN, IN SPECIFIED PROVINCES, CANADA, 1931

Racial Origin	Actual as P.C. of Predicted		
	Ontario	Saskatchewan	British Columbia
English.....	95	107	134
Irish.....	86	86	75
Scottish.....	92	95	97
Czech and Slovak.....	89	133	93
Dutch.....	61	107	103
German.....	83	136	90
Hungarian.....	102	129	115
Polish.....	100	86	78
Roumanian.....	78	87	55
Scandinavian.....	95	111	106
Ukrainian.....	101	124	113
Average.....	80	100	96

As was intimated in a similar analysis earlier in this monograph, deviations from expectation must arise from one of two types of causes: first, eccentric behaviour of one or more of the independent variables which may raise or lower the expectation unduly, or second, conditions and influences extraneous to the correlation itself.

An examination of the above figures shows that the average behaviour is for the actual birth rate to be materially below expectation in Ontario, to be appreciably above in Saskatchewan and moderately below in British Columbia. What is true on the average is true of the majority of races as the figures stand. In a number of cases where deviation from typical behaviour occurs the explanation is within the correlation itself. For example, the abnormally high figure for the English in British Columbia is attributable to the presence of an abnormally low proportion North American-born which unduly lowers the expectation and causes an excessive distortion of the actual from the expected. With the Irish the prediction was too large in the province of Saskatchewan because of a distinctly smaller percentage urban in that province than in any of the other five. Precisely the same circumstance accounted for the failure of the Scottish to conform.

* The prediction was subsequently completed for all provinces and the accuracy of the correlation proven.

exactly to type. With the Polish a number of eccentricities occurred. In the case of the Roumanians the unusually low figure for British Columbia seems to be in part the result of high expectation because of abnormally favourable age distribution and high urban concentration as compared with that of persons of the same origin in Saskatchewan and Ontario.

It is not the exceptional cases, however, that are important; it is the average behaviour and this leads to the question as to why after allowance is made for differences in age, conjugal condition, length of residence, rural-urban distribution and illiteracy, conditions in Ontario appear to be quite unfavourable to high fertility, conditions in Saskatchewan favourable and those in British Columbia intermediate.

No categorical answer can be given to this question but it seems likely that the explanation of the differences is to be sought in those environmental factors mentioned in the preceding discussion on the reasons for the difference between the size of the coefficient based on a homogeneous unit like the Prairie Region treated as a whole and that derived from data on individual provinces including two with industrial and economic structures radically different from that in the Middle West. The relative intensity of the weight of the depression in the several provinces does not seem to be reflected in these residuals. It was, of course, taken care of within the correlation if the suggested interpretation be correct. Occupational differences seem to be the most fruitful avenue of exploration. For example, the unusual importance of agriculture in Saskatchewan would seem to be highly favourable to high fertility. While it is true that many of foreign extraction in Ontario—particularly of the more recent arrivals—are in skilled, semi-skilled and especially unskilled occupations where relatively high fertility is expected as compared with that in "white collar" occupations, not nearly so high fertility would be expected even among those industrial classes as among agriculturists. And besides, there had been considerable population movement both from the Maritimes and the Prairie Provinces to Ontario and Quebec during the preceding decade and it is reasonable to suppose that persons who were able and willing to move such long distances to improve their economic position would be largely of the low fertility classes. The same would apply to British Columbia. A very marked migration from the Prairies to the West Coast occurred during the inter-censal period and if it conformed at all closely in structure to that which has been going on for decades it also contained a disproportionate share of low fertility classes. Of course, it is known that large numbers of unemployed single males have sought the milder climate of the Pacific Coast but that is not the type of migration that is here under discussion. The fertility rates in this correlation are in terms of married women and where married couples migrate from one section of Canada to another, whether it be to better their economic position or to seek more pleasant surroundings, such couples are likely to be of a class whose fertility is lower than that prevailing among their parent stock in the province from which migration took place. Besides, quite apart from the possible importance of population movements in explaining these figures, it still remains that British Columbia is much less agricultural than Saskatchewan and its industrial and occupational structure differs in many other respects.

Space does not permit the pursuing of the explanation of these environmental (and cultural) differences further nor of a discussion of their probable relation to fertility in the several provinces. The point does seem clear, however, that marked differences do occur apart altogether from racial origin and the five variables included in the correlation.

No mention has been made of religion. That this is an extremely important factor in accounting for differences in fertility is beyond question. The conclusion is reached in Chapter XV that religion is largely a matter of racial background and while the influence may have been reflected to some small extent in one or two of the independent variables included in the present analysis, its real effect is combined with that of other factors in the large residuum outside the present regression.

INFANT MORTALITY

Attention is now directed to another important section of vital statistics, that of infant mortality. Since 1926, the records for Quebec have been collected on a basis comparable with those for the other provinces formerly included in the Registration Area so that the figures on births and deaths for 1931 and the crude infant mortality rates derived therefrom apply to the whole of Canada (Tables 76 and CI).

All births, including illegitimate, are included in the present tabulations. The alternative of expressing deaths in terms of legitimate births only, tends to over-state the infant mortality rate and might introduce a slight bias against those origins which had larger percentages of children born to unmarried mothers. Since the racial origin of father is not recorded for births to unmarried mothers, in cases of illegitimate birth the child was assigned to the same racial origin as the mother. The common denominator for a given origin, therefore, includes fathers of that origin for legitimate births and mothers for illegitimate. A slight error is doubtless involved in following this procedure, but the rates so obtained are considered appreciably more accurate than those which would have been secured by the alternative method of neglecting illegitimacy.

The usual practice has been followed in computing the infant mortality rates, *viz.*, that of expressing the number of deaths of infants under twelve months in a given calendar year as a percentage of the number of births in the same year. In doing that, however, certain assumptions are made which may be mentioned in passing. First, a large percentage of infant deaths occurring in the given year consists of those who have been born some time during the previous twelve months. For instance, of the 20,360 infants less than 1 year of age who died in 1931 perhaps half were born in 1930, yet the total infant deaths in 1931 is expressed as a percentage of the total births in that calendar year. The assumption underlying this procedure is that no great error appears in the infant mortality rates as a result of using the 1931 figures of births as a basis with which to compare the deaths in that period. A slight error is involved, of course, and it might assume considerable dimensions if, for some reason, the birth rate was very much higher or lower in the later year. Under normal conditions, however, the error is negligible, and as the above is the most practical method of securing a rate it is usually followed.*

The second assumption is that as many children under 1 year of age came into the Dominion as left it in the period examined. The influence of any probable difference between the number of infants under 1 year emigrating and immigrating can, in the nature of the case, be but slight. So for all practical purposes it is correct to follow the universal procedure and to say that approximately 8.47 out of every 100 babies born in Canada die before living twelve months.

Rates for specific origins are ranked according to size in Table 76, and assembled in geographical and linguistic groups in Table CI. The French are assigned a class to themselves for their rate (11.39) is almost twice as high as that for the average North Western European race and two-fifths higher than that for the average South Eastern European. Deaths of infants of French origin constituted more than half the deaths of infants under 1 year of age in Canada in 1931, while births to French parents represented only 38.4 p.c. of all births in the same year. The accuracy of the infant mortality rate in the case of this origin is not open to question because of any inadequacy of the sample. The same can not be said of that for the Bulgarians who are at the other end of the list. Only 60 children were born to Bulgarian parents in 1931 and only 1 died yielding an abnormally low rate of 1.67 p.c. This figure compares with 6.02 for legitimate births in the Registration Area in 1925 and is obviously quite unrepresentative.

Turning now to a more detailed examination of the tables, it is seen that a deplorably wide variation still exists. Over 10 in 100 children born died before reaching the age of 1 year in the case of six origins, *viz.*, the Indian (16.81), Hindu (12.00), Negro (11.47), French, (11.39), Austrian (11.00) and Yugoslavic (10.39). Less than 6 died for a dozen races in the lower portion of the list. The rate for the average North Western European origin (excluding the French) was 5.38 as against 8.03 for the average South, Eastern and Central European and 8.32 for the Asiatics. Though the average rate is high for the latter group, certain of the Asiatic peoples seem to have been fairly successful in reducing infant deaths, notably the Japanese (5.93) and the Syrians (6.50). Even the figure for the Chinese (7.35) is lower than the average for the South, Eastern and Central Europeans.

The highest figure in the North Western European group (excluding the French) is smaller than the lowest in the South, Eastern and Central European, the unreliable figure for the Bulgarians excepted.

The averages for the linguistic groups rank in much the same order as in 1925 when data for the Registration Area and legitimate births only were used. The Scandinavians are lowest with an average of 5.52, the British next with 5.68. The Germanic group follows closely with an average of 5.77. A considerable jump then occurs to the Latin and Greek average of 7.79

* Canadian figures show that more than three-quarters of the deaths of infants were among children born in the same calendar year.

and the Slavic (8.07). As was stated previously the French with 11.39 are in a class by themselves. As has already been inferred, there is considerable overlapping of the rates for individual races included in the Scandinavian, British and Germanic categories; similarly with the Latin and Greek and Slavic groups. The situation in its broader outlines, however, is as depicted above.

Unfortunately, because of the relatively few years since data for all Canada have become available (1926) it is too early to make any generalizations regarding the trend of infant mortality rates for the individual stocks but an examination of the relationship between infant mortality and certain associated phenomena throws a certain amount of light on the subject indirectly, as well as suggests certain causal connections.

TABLE CI.—INFANT MORTALITY RATES PER 100 LIVE BIRTHS, BY GEOGRAPHICAL AND LINGUISTIC GROUPING OF RACIAL ORIGINS, CANADA, 1931

Racial Origin	Infant Mortality Rate	Racial Origin	Infant Mortality Rate
<i>North Western European</i>	5.58	<i>British</i>	5.68
Icelandic.....	6.63	English.....	6.40
English.....	6.49	Irish.....	5.32
German.....	6.20	Scottish.....	5.32
Irish.....	5.92	Welsh.....	5.00
Belgian.....	5.58	French.....	11.39
Dutch.....	5.54		
Danish.....	5.42	<i>Scandinavian</i>	5.58
Scottish.....	5.32	Icelandic.....	6.63
Swedish.....	5.10	Danish.....	5.42
Welsh.....	5.00	Swedish.....	5.10
Norwegian.....	4.91	Norwegian.....	4.91
Swiss.....	2.40		
<i>South, Eastern and Central European</i>	8.08	<i>Germanic</i>	5.77
Austrian.....	11.00	German.....	6.20
Yugoslavia.....	10.39	Belgian (Flemish).....	5.58
Hungarian.....	9.78	Dutch.....	5.54
Polish.....	9.39		
Roumanian.....	8.90	<i>Latin and Greek</i>	7.79
Ukrainian.....	8.89	Roumanian.....	8.90
Czech and Slovak.....	7.89	Greek.....	7.63
Greek.....	7.63	Italian.....	6.83
Russian.....	7.23		
Italian.....	6.83	<i>Slavic</i>	8.07
Finnish.....	6.76	Austrian.....	11.00
Bulgarian.....	1.67	Yugoslavia.....	10.39
		Polish.....	9.39
<i>Asiatic</i>	8.52	Ukrainian.....	8.89
Hindu.....	12.00	Czech and Slovak.....	7.89
Armenian.....	9.84	Russian.....	7.23
Chinese.....	7.35	Bulgarian.....	1.67
Syrian.....	6.50		
Japanese.....	5.93		

¹ Unrepresentative; if properly weighted, figures would be considerably lower.

Correlation between Infant Mortality, Fertility, Illiteracy and Percentage Urban.—

From a number of possible independent variables, three were selected as likely to be quite closely associated with infant mortality, viz., fertility, illiteracy and rural-urban distribution. Mean births, 1930-32, per hundred married females (15-44) at the date of the census served as a measure of fertility. The percentage of the race illiterate and the percentage of the race urban were taken as the other variables. A multiple coefficient of correlation of $R = .86$ was obtained which implies that the three factors mentioned accounted for about 74 p.c. of the variability in the infant mortality rates as between the different origins. The nature of the relationships is seen from the following regression equation:—

$$X_1 = .2274 X_2 + .2236 X_3 - .0031 X_4 + 2.3362$$

where X_1 = infant mortality rate 1931;

X_2 = mean births 1930-32 per one hundred married women (15-44);

X_3 = percentage of race illiterate;

X_4 = percentage of race urban.

As in previous correlations the reasons for the large deviations must be sought either in the influence on the prediction itself of wide departures from average in respect to one or more of the independent variables or in extraneous causes outside the equation. All of the British races showed abnormally small percentages illiterate which tended to reduce the expected and increase the disparity. The French were characterized by unusually high fertility which unduly raised the expectation and made for a smaller excess of the actual than otherwise would have appeared. No marked deviation from average appears in the independent variables for the Austrians so that the unusually high surplus of actual over expected in that case must be attributable to causes extraneous to the correlation. A careful perusal of the figures suggests that the expectations for the Belgians, Dutch, Finnish and Germans were not seriously influenced one way or the other by extreme variants; those for the Czechs and Slovaks, Hungarians, Poles, Roumanians and Russians were probably a bit high and those for the Hebrews, Italians and Scandinavians a bit low. Allowance should be made for these distortions in attempting to evaluate the residual factors which either raised the actual above or reduced it below what was anticipated. Further investigation into this phase of the subject must be left to the individual reader possessed of special medical knowledge on the causes of mortality among infants.

DEAF-MUTISM

Tables CHII, 78 and 79 show the numbers of deaf-mutes in Canada and their relation to racial origin, birthplace and religion.*

The instructions to enumerators was to "include as Deaf-mutes any person who has been totally deaf from birth. In general persons who can not hear or talk". Of the 6,655 deaf-mutes in Canada in 1931 who stated the age at which the infirmity began, 61.5 p.c. report it as existent from birth and 90.2 p.c. as having suffered from the infirmity from under 5 years of age. Deaf-mutism is thus largely congenital or associated with accident or disease in the early years of childhood.

* See also 1931 Census, Vol. I, Chap. XXIII.

TABLE CHII.—DEAF-MUTES AND RATES PER 100,000 POPULATION, BY RACIAL ORIGIN, CANADA, 1921 AND 1931

Racial Origin	Total Population ¹ 1931	Deaf-Mutes 1931	Rates per 100,000 Population	
			1921	1931
Total.....	10,362,838	6,787	60.9	65.4
English and Welsh.....	2,802,736	1,430	51.3	51.0
Irish.....	1,230,412	561	51.3	45.6
Scottish.....	1,345,559	650	48.3	48.3
French.....	2,927,525	2,999	87.8	102.4
Austrian, n.o.s.....	48,623	50	"	102.8
Belgian.....	27,566	11	"	40.0
Dutch.....	148,930	83	"	55.8
German.....	473,407	305	71.9	64.4
Hebrew.....	166,720	90	"	57.4
Icelandic.....	19,381	12	"	62.0
Italian.....	98,150	42	29.4	42.8
Norwegian.....	93,119	26	"	27.9
Polish.....	145,487	80	"	59.1
Russian.....	88,124	55	40.0	62.4
Swedish.....	81,168	25	"	30.8
Ukrainian.....	225,110	157	"	69.7
Asiatic.....	84,483	10	"	11.8
Indian.....	117,322	76	55.9	64.8
Negro.....	19,448	11	"	56.6
Various.....	220,675	54	"	24.5
Unspecified.....	8,897	34	"	382.2

¹ Exclusive of Yukon and Northwest Territories.

² Data not tabulated separately in 1921.

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From Table CIII it will be seen that the Austrian, n.o.s. and French with between 102 and 103 deaf-mutes per 100,000 showed the highest rates of all groups in Canada in 1931. The Ukrainians, Indians, Germans, Russians and Icelanders follow at a considerably lower level with rates ranging between 60 and 70 per 100,000. Among the lowest were the Asiatic races with 11.9 per 100,000, the Norwegians with 27.9, the Swedish with 30.8, the Belgians with 40.0 and the Italians with 42.9. The English-speaking stocks average about 50 deaf-mutes per 100,000 of the population.

During the decade appreciable increases appear to have occurred in deaf-mutism among the French, Italians, Indians and Russians and probably also would be found in many other sections of the population where comparable data available. The rates for the Anglo-Saxons have decreased slightly and that for the Germans materially. The latter decrease is probably to some extent attributable to mis-statement of origin in 1921 to which repeated reference has been made. Decreases, however, are the exception. For the population as a whole the rate increased from 60.8 per 100,000 to 65.4 in the ten-year period. Whether a portion of this increase may be accounted for by more accurate reporting in 1931, can not be determined. As settlements grow older a moderate increase in deaf-mutism is to be expected.

This latter point is exemplified in Table 78 which classifies deaf-mutes by place of birth. Persons born in the older province of Quebec and in the Maritimes generally show much higher rates than those for Ontario and the West which have received very considerable proportions of immigrant stock from abroad. Only the most virile of any stock emigrate. Notice the low proportions of persons with this defect among immigrants from the British Isles and Europe particularly and to a less extent among those from the United States. Race, of course, has also something to do with the variation in the rates as between provinces. Reference to Table CIII suggests that where the French and Slavs (particularly Austrians and Ukrainians) constitute significant proportions of the population higher rates are to be expected. This circumstance coupled with generally older settlement accounts for the higher figure for Manitoba than for Saskatchewan. Where Anglo-Saxons predominate the incidence of deaf-mutism is likely to be moderate, *cf.*, the relatively low figure for Prince Edward Island as compared with the other Maritime Provinces, and the moderate rate for Ontario.

Deaf-mutism also seems to be associated with fertility. A simple correlation between its incidence and births per hundred women (15-44) for the different origins in Canada yields a coefficient of $r = -.391$. While the association is not high it is of sufficient magnitude to be significant considering the crude index of fertility employed and the manifold other factors that must be involved. This relationship may have some bearing on the large percentage that is congenital.

The occurrence of this defect also varies as between religions as may be seen from Table 79. The sections of the population of some religious faiths have a larger number of dependents from this cause than have others.

To accurately evaluate the differing extents to which deaf-mutism is directly or indirectly related to age of settlement, racial origin, nativity and fertility, resort would be necessary to the method of partial and multiple correlation but the existence and nature of the types of association are clearly demonstrated by the above-mentioned tables.

BLINDNESS

Unlike deaf-mutism, which is to a large extent congenital, the incidence of blindness increases with age as is shown by the following percentages based on the 1931 Census tabulations for all Canada*:-

TABLE CIV.—PERCENTAGE DISTRIBUTION OF THE BLIND, BY AGE WHEN VISION WAS LOST, CANADA, 1931

Age when Vision Was Lost	P.C.	Age when Vision Was Lost	P.C.
Total.....	100.00	25-34.....	6.12
At birth.....	10.71	35-44.....	8.10
Under 1 year.....	1.74	45-54.....	9.26
1-4.....	4.13	55-64.....	12.33
5-14.....	7.38	65-74.....	16.23
15-24.....	5.33	75 and over and not stated.....	18.70

An examination of the above figures reveals that 56.51 p.c. of the persons who were blind in 1931 had lost their vision after 45 years of age and 47.25 p.c. were 55 or over when they became blind.

* See also 1931 Census, Vol. I, Chap. XXIII.

Other things being equal, therefore, one would expect to find the largest percentage of blindness in the origin and nativity groups with the largest proportions in the higher age categories. Senility ranks second in importance in causes of blindness. The major cause is affections and diseases of the eye such as cataract, glaucoma, atrophy of the optic nerve, etc. The incidence of many of these diseases, of course, increases with age. Accidental causes are given third place. Here the increased incidence with age is not so pronounced but an examination of the nature of accidents listed indicates its presence to a moderate degree. These three categories account for nearly two-thirds of the blindness in Canada. Only 11.1 p.c. is attributable to congenital causes and about half that amount to general infectious diseases.

The data in Tables 80 and 81 should therefore be read in conjunction with the analysis of age of the various racial and nativity groups given in Chapter III. Reference should also be made to the analysis of occupational distribution given in Chapter XII. Certain occupations are more hazardous from the standpoint of liability both to accident and disease and others are less so. An exhaustive discussion of the causes of blindness is beyond the scope of this monograph but certain significant facts are readily apparent from the tables.

First, blindness appears to be increasing in Canada at a rapid rate. In 1921, there were 50.1 blind persons per 100,000 population; in 1931, 70.9, an increase of over 40 p.c. Some of this increase is associated with increasing proportions of the population in the higher age categories where the incidence of blindness is greatest, but this shifting of the age distribution alone is by no means adequate to account for an increase of 40 p.c. in the rate in the space of one decade. It may be that the reports were more complete in 1931 than in 1921, but it is hardly likely that any very considerable difference could have occurred in the absence of any material change in the instructions issued to enumerators. The tentative conclusion, therefore, is advanced that blindness *per se* is on the increase in Canada and reference to earlier census figures indicates that the tendency has been in evidence for the past two decades. Not only is the rate for the total population higher in 1931 than in 1921 but it is higher for every origin where comparable figures are available.

The incidence of blindness is several times heavier among the North American Indians than in any other section of the population, and as with other origins it is increasing. Of the white races, the French show the largest proportion suffering from loss of vision. This is to a considerable extent a matter of age distribution. The Anglo-Saxon and Dutch stocks also show relatively high rates. They, too, are among the older elements of the Canadian population though, of course, not as old as the French. But, then, the incidence of blindness is not so great. Those ethnic groups whose age distribution includes large proportions in late youth and early manhood because of immigration, and in which the presence of diseases of the eye has been reduced to a minimum by rigid medical examination of incoming settlers, have much lower rates than either of the older stocks or the population as a whole.

Whether there exists greater liability to blindness among certain white races than among others can not be determined from the present data. The figures in Table 80, however, do show the origins where blindness was more and where it was less common in 1931. Table 81 does the same for specified nativities. The marked and continuous decline in passing from Nova Scotia on the east to Alberta on the west with the subsequent moderate rise for British Columbia is a striking reflection of differences in age distribution of the populations of these provinces and of the relative infusion of immigrant streams purged of infectious diseases at the ports of entry. The figures for the immigrant born also reflect differences in length of Canadian residence, and consequent age distribution. Generally speaking, blindness is relatively much more frequent among persons born in the older provinces of the East, than among persons born in the newer western provinces, and among the older immigrants than among the newer arrivals.

CHAPTER XIV

MENTAL INSTITUTIONS

On June 1, 1931, a special Census of Mental Institutions was taken along with the general Census of Population. The resulting data were subject to elaborate cross-classification by race and nativity and serve as a basis for the present study.* The inmates of mental institutions, of course, do not include all persons suffering from mental illness any more than do the inmates of penitentiaries include all persons who have committed crimes. Nevertheless, the great majority of serious cases, and particularly of those where the patient is an actual or potential menace to life or property, of necessity find their way there. Statistics of mental institutions thus might be expected to serve as a rough index of the incidence of mental disease in the various sections of the population. Just how satisfactory such an index is will be discussed later in this chapter.

Age and Sex.—Before proceeding to an investigation of the relation of nativity and racial origin to mental illness, it is necessary to examine its association with age and sex (see Table 82).

On June 1, 1931, there were 31,172 persons in mental institutions in Canada of whom approximately 54 p.c. were males and 46 p.c. females. The median age of mental hospital inmates was 44½ years. All age groups from 0-4 to 95 and over were represented. The general rate on the total population was 300 per 100,000. It increased steadily from a low of 40 per 100,000 for persons 0-14 years of age to a maximum of 708 per 100,000 at ages 55-59. The figure for the next higher quinquennial age group was almost as high but thereafter it declined to about 630. The total rate for all males was somewhat higher than that for all females, 317 against 283, but this did not apply to all ages. Specific rates for the males exceeded those for the females only for ages under 50; for higher ages, female inmates outnumbered males per 100,000 population. Whether mental illness is actually more common among males than among females under 50 can not be stated with assurance from the above figures. It may merely be that more of the mentally-ill males were committed than of the mentally-ill females, either because of the greater difficulty of taking care of the males at home and/or because in this country with its large floating male population, there are more unattached homeless males than females. Whatever be the reason one can at least say with assurance that the number of male inmates per 100,000 male population was higher at all ages below 50 than was that for the female.

The differences in the rates for the males and females, however, are nothing like as large as in the case of penitentiary and corrective institutions and no serious error would be involved in comparing totals for both sexes in the various nativity and origin groups. The same can not be said of age. Important though it is in the case of convictions for indictable offences and of penitentiary statistics, its importance is even greater with the incidence of mental disease. This fact should be constantly kept in mind throughout the subsequent analysis.

Nativity of Inmates of Mental Institutions.—Table 83 distributes the inmates in mental institutions by sex and individual countries of birth and shows the proportion that the inmates in each class constitute of the population of the corresponding category. Great variation appears in the rates. Immigrants from Yugoslavia were the lowest with 123 per 100,000; and immigrants from Austria the highest with 1,187† per 100,000. The figure for Iceland was 907. The rate for the Canadian born was 272; that for the British born was appreciably higher at 375. For seven of the twenty-eight foreign countries of birth, commitment rates were smaller than for the native Canadians, but for the remaining twenty-one foreign nativities they were larger, in many instances much larger. Rates for males exceeded those for females in the case of thirty out of the thirty-five nativities listed. A more adequate summary picture is presented in Table CV and Fig. 50.

* See also 1931 Census, Vol. I, Chap. XXII.

† This figure is probably somewhat higher than it should be because the old Austria in which some of the inmates were born is larger than the post-War Austria. The mental hospital records show country of birth at time of admission.

TABLE CV.—INMATES IN MENTAL INSTITUTIONS AND RATES PER 100,000 POPULATION, BY SEX AND GEOGRAPHICAL AND LINGUISTIC GROUPING OF COUNTRIES OF BIRTH, CANADA, 1931

Group of Countries of Birth	Inmates in Mental Institutions			Rates per 100,000 Population		
	Both Sexes	Male	Female	Both Sexes	Male	Female
Canada.....	21,948	11,307	10,641	272	277	266
Other British.....	4,448	2,551	1,895	375	403	343
United States.....	1,156	639	517	338	365	306
North Western Europe.....	930	612	318	517	535	486
South, Eastern and Central Europe.....	2,075	1,454	621	395	457	299
Scandinavian.....	529	369	160	588	606	551
Germanic.....	261	158	103	390	382	387
Latin and Greek.....	334	258	76	377	402	233
Slavic.....	1,524	1,045	479	403	404	313
Asia ¹	144	134	10	263	276	172

¹ China and Japan only.

The incidence of institutional cases of mental illness is slightly lower among the Asiatics than even the Canadian born.* That for all other groups of natives is higher. The figure for the United States immigrants lies midway between that for the native Canadians and that for persons born in other British countries. The proportion of North Western Continental Europeans far exceeds that of the South, Eastern and Central. For this the Scandinavians are responsible with a rate over twice that for the Canadian born. The rates for the other Continental European groups are all higher than 375—that for the British—though the Latin and Greek is only very slightly higher. Males in all groups show larger proportions than do females.

These figures localize the incidence of mental hospital cases as between the different nativity groups in our population but only *under existing conditions* of age, sex, occupational and rural-urban distribution, length of Canadian residence and so on. They merely describe the distribution of inmates as it existed in 1931. In themselves they neither measure the relative liability of the different nativities to mental hospital commitment nor do they *prove* that any *bona fide* differences in liability exist.

To discover just what allowance should be made for age and sex it is necessary to restrict the cross-classification to the three broad nativity groups, *viz.*, Canadian, British and foreign born. An index of age favourableness was computed for the males and females and each nativity by the indirect method. The results are summarized in Table CVI:—

TABLE CVI.—INMATES IN MENTAL INSTITUTIONS PER 100,000 POPULATION, CORRECTED FOR AGE AND SEX, BY BROAD NATIVITY GROUP, CANADA, 1931

Nativity	Crude Rate			Index of Age		Rates Corrected for Age and Sex		
	Both Sexes	Male	Female	Male	Female	Both Sexes	Male	Female
All countries.....	300	317	283	100.0	100.0	300	317	283
Canadian born.....	272	277	266	89.5	90.7	302	306	293
British born.....	375	403	343	134.5	140.0	274	300	245
Foreign born.....	399	443	353	134.3	129.9	300	330	256

The importance of age and sex in explaining the differing incidence of mental hospital commitments as between the broad nativity groups is strikingly demonstrated in the above tabulation. The crude rate for the British born (both sexes) was nearly 40 p.c. higher than that for the Canadian born and the crude rate for the foreign born nearly 50 p.c. higher. When allowance is made for differences in age and sex distribution, the rates for the Canadian and foreign born are practically identical and that for the British born nearly 10 p.c. lower. In the case of the foreign-born alien the entire excess over the crude rate for the native Canadian is accounted for by the relatively more favourable age and sex distribution. With the British, age and sex are

* Rather heavy deportations may have contributed to this result in so far as disproportionate numbers of the mentally unfit were included.

more than adequate to explain the heavier incidence. Their corrected rate was appreciably lower than that for the Canadian born. It may be that *bona fide*, significant differences in liability to mental illness leading to institutional treatment do exist as between immigrants from individual countries of birth. Unfortunately, that can not be discovered from existing tabulations.

The behaviour of the corrected figures for the sexes confirms an earlier observation that the higher the surplus of males the greater is the incidence of mental hospital commitments. This association persists after disparities of age distribution are eliminated.

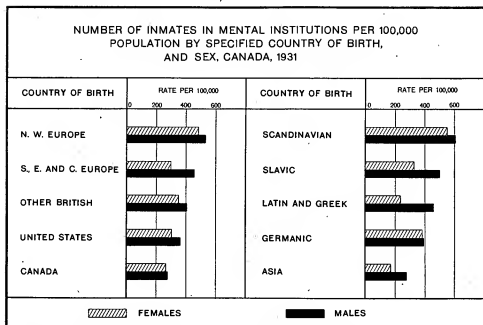


FIG. 50. The above chart merely localizes the incidence of mental hospital cases as between the different nativity groups. The rates for the males are invariably higher than those for the females of the same place of birth. Differences in age and sex are no doubt responsible for a good portion of the variation in the rates as between the nativities. Other contributory causes are suggested in the text.

Table 84 cross-classifies the data by broad nativity groups and provinces. The absolute figures from which the table was derived were large enough to ensure reliability of all rates except those for immigrants resident in Prince Edward Island. A number of important facts are brought to light by this tabulation. Rates for the Canadian born are in general materially lower in the West than in the East. The reverse is true of the British and foreign born, of whom mental hospital inmates constitute unusually big proportions in Manitoba, Saskatchewan and British Columbia. Variation in age distribution doubtless contributes materially to these differences. Just how much it is impossible to say, but the fact remains that in every province west of the Maritimes mental breakdown is more frequent among the immigrants than among the Canadian born. The rates for Alberta are generally lower than elsewhere in the West. Why that is so is not clear. Age distribution is probably a partial cause. Finally, attention is drawn to the fact that, while for all nativities males show higher proportions of inmates in mental institutions than do females in the four western provinces, there is nothing like the same consistence in the East. In Ontario and Nova Scotia the rates for Canadian-born females are higher than for the males; the same is true of the British born in Prince Edward Island, New Brunswick and Québec.

Summarizing then, the incidence of mental illness leading to institutional treatment is heavier among males than females, among the immigrants than among the Canadian born, among the Continental Europeans than among persons of British or United States birth, and among the

North Western Europeans particularly the Scandinavians than among the South, Eastern and Central Europeans. The indicated difference in incidence between the Canadian born and foreign born as a group is entirely attributable to peculiarities of age and sex distribution. That between the Canadian and British born is more than accounted for by, these same causes. It seems to follow that differences in age and sex are likely to be of major importance in explaining the differing incidence as between the smaller nativity groups as well. The incidence of mental hospital cases is heaviest in British Columbia and Manitoba and lightest in New Brunswick. Here differences in the adequacy of hospital accommodation must be added to differences in age and sex distribution. The situation in the West is peculiar in that rates are generally below average for the Canadian born and materially above average for other British and foreign nativities. Age and sex are largely responsible. These findings at least localize the burden and suggest some important reasons for the variation in its incidence.

Parentage of Inmates.—Heretofore attention has been focussed on the nativity of the inmate himself. Table CVII tabulates the mental hospital population by nativity of parents and sex. As a group the descendants of Canadian-born parents (both sexes) show 325 per 100,000 in mental institutions, those with British-born parents 304, with foreign-born parents 297 and with mixed parentage 127. It is seen that the spread between the three major groups is not large when totals are considered. The same is not true of persons with mixed parentage. The incidence of institutionalized mental cases in the latter group is less than half that among persons in the former categories.

Moreover, when allowances are made for peculiarities in age and sex distribution this difference persists and the differences between the rates for the other nativities are materially increased. In the absence of a cross-classification of inmates by age, sex and parentage, it was necessary in making these allowances to resort to the same technique as that used in the preceding section. An index of age favourableness was computed for the males and females of each parentage by the indirect method. The corrected rates are shown in the right-hand section of the adjacent table.

TABLE CVII.—INMATES IN MENTAL INSTITUTIONS PER 100,000 POPULATION, CORRECTED FOR AGE AND SEX, BY NATIVITY OF PARENTS, CANADA, 1931

Nativity of Parents	Crude Rate			Index of Age		Rates Corrected for Age and Sex		
	Both Sexes	Male	Female	Male	Female	Both Sexes	Male	Female
Canadian-born.....	325	334	317	90.8	92.5	356	368	343
British-born.....	304	322	285	129.0	134.4	232	250	212
Foreign-born.....	297	339	243	108.0	83.6	291	314	260
Mixed parentage.....	127	130	123	51.0	86.3	152	160	143

While the crude rate for persons (both sexes) with Canadian-born parents is only 7 and 9 p.c. higher than corresponding rates for persons with British- and foreign-born parents, when corrections are made for differences in age and sex distribution the rate for persons with Canadian-born parents is found to be 53 p.c. greater than that for persons with British-born parents and 22 p.c. greater than that for persons with foreign-born parents. Besides, it is appreciably more than double that for persons with mixed parentage. What is true of the combined figures for both sexes applies equally to the rates for males and females when considered separately.

The conclusion, therefore, seems to be that age for age and sex for sex, the incidence of hospital cases of mental illness (or deficiency) is considerably heavier among persons of Canadian-born parentage than among persons of British- and foreign-born parentage, and very much heavier than among persons of mixed parentage. How far these differences are attributable to differences in the incidence of mental defects or disorders and how far to differences in attitudes toward hospitalization can not be determined from the evidence at hand. It is quite possible that the second and third generation Canadians would be better acquainted with the splendid work being done by mental hospitals in this country and consequently would be far more inclined to send their mentally ill or defective to the hospital for institutional care and treatment. This factor alone might quite easily account for the spread in the rates as between the three major parentage groups, but it is hardly likely that it would explain the exceedingly low rate for the descendants of mixed parentage. It might have pointed to the conclusion that intermarriage is more common among the physically and mentally more fit of the various nativities had the feeble-

minded constituted a larger part of the mental hospital population than they do. An alternative explanation would be that intermarriage is more prevalent in those classes where because of occupational or other reasons mental breakdown is less common. The statistician can give no categorical answer to these questions from presently available data.

Racial Origin of Inmates.—Table 85 shows the racial origin of inmates of mental institutions and the rate per 100,000 (both sexes) for each origin.* The variation between the recorded rates for the several stocks is, if anything, even more marked than for the individual nationalities. The proportion of the Anglo-Saxon race in mental institutions is appreciably above the all-Canada average of 300, that for the French slightly below. The standing of every group of foreign origins but the Scandinavian is lower than the British. That of the Germanic and Asiatic peoples is materially below. The precise rates for the various groups are shown in Table CVIII and Fig. 51.

* Figures for the Austrian, Dutch, Russian and Ukrainian origins are omitted for reasons explained subsequently in the text.

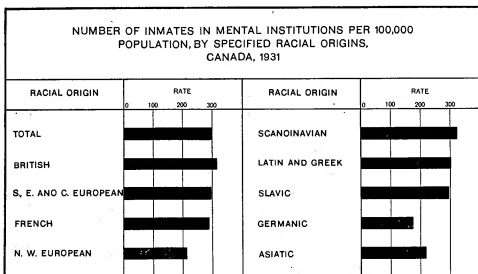


FIG. 51. As in the case of rates for the different nationalities, age and sex no doubt are responsible for a considerable proportion of the variation between the origins in respect of the frequency of occurrence of institutional cases of mental illness. The balance is attributable to a variety of causes including differing attitudes toward institutional treatment, differing liability to mental illness and a number of others, the relative importance of which can not be determined from the available statistics.

TABLE CVIII.—INMATES IN MENTAL INSTITUTIONS AND RATES PER 100,000 POPULATION, BY GEOGRAPHICAL AND LINGUISTIC GROUPING OF RACIAL ORIGINS, CANADA, 1931

Racial Origin Group	Inmates in Mental Institutions	
	Total	Rates per 100,000 Population
All races.....	31,172	300
British.....	16,993	310
French.....	8,497	290
North Western European.....	1,798	290
South, Eastern and Central European.....	2,329	290
Scandinavian.....	737	323
Germanic.....	1,134	174
Latin and Greek.....	412	301
Slavic.....	1,653	297
Asiatic.....	153	219

These figures present several curious contrasts with the adjacent data on birthplace. The North Western European *immigrants* as a group showed much larger proportions in mental institutions than did the South, Eastern and Central European immigrants. The North Western European *racés* show appreciably smaller proportions than the South, Eastern and Central European *racés*. The figure for persons of Scandinavian birth, particularly the Icelanders, the Swedes and the Norwegians, were away out of line with those for immigrants from other European countries. That for Scandinavian immigrants and that for their descendants, *i.e.*, for the *race* corresponds much more closely with the general average.

Turning finally to Table CIX one finds that for every individual origin the proportion in mental institutions is lower for the Canadian-born section than for the racial origin as a whole including immigrants. With many origins it is drastically lower—particularly in the case of those whose residence on this continent is short. One suspects that age has a good deal to do with this circumstance and possibly sex. However that may be, such appear to be the facts as to the incidence of mental hospital cases as reflected by the racial origin records of those institutions.

TABLE CIX.—CANADIAN-BORN INMATES IN MENTAL INSTITUTIONS AND RATES PER 100,000 POPULATION, BY RACIAL ORIGIN, CANADA, 1931

Racial Origin	Total Population	Inmates in Mental Institutions	
		Total	Rates per 100,000 Population
All races.....	8,069,261	21,916	271
British.....	4,033,007	11,810	293
English.....	1,920,259	6,437	335
Irish.....	1,053,449	2,593	246
Scottish.....	1,022,915	2,780	272
Other.....	36,384	-	-
French.....	2,850,576	222	288
Austrian.....	26,119	44	168
Belgian.....	11,194	11	98
Czech and Slovak.....	8,437	27	320
Dutch.....	119,006	58	49
Finnish.....	12,363	8	65
German.....	328,945	605	184
Hebrew.....	68,703	120	175
Hungarian.....	11,298	12	106
Italian.....	32,136	40	77
Polish.....	68,459	74	103
Rumanian.....	14,739	6	48
Russian.....	47,918	69	145
Scandinavian.....	99,333	90	91
Ukrainian.....	128,281	44	34
Other European.....	13,110	40	305
Asiatic.....	24,311	18	74
Chinese and Japanese.....	16,707	11	66
Other.....	7,604	7	92
Indian and Eskimo.....	127,953	103	80
Unspecified and other.....	23,673	515	-

¹ Rate probably too low.

The Problem of Interpretation.—What is the meaning of all this wealth of information regarding the incidence of institutional cases of mental illness? It would appear that race by race the proportions in mental institutions are higher among the foreign than among the Canadian born. Is this a genuine nativity difference—arising perhaps out of the relatively greater difficulties encountered by immigrants in adjusting themselves to a new environment or out of the abnormal social life necessarily led by the large floating immigrant male population? Or is it mainly the result of more favourable age or sex distribution? How far are the differences in the rates for the various origins really racial? To what extent are they the result of more or less extraneous factors like the ones just mentioned? Are they associated with rural-urban distribution, occupation, length of Canadian residence and if so, how? Are they in any way related to fertility or religion? Do different attitudes toward committing persons who are mentally ill characterize the several origin and nativity groups? If so, which groups are predisposed toward institutional treatment and which are averse to it? How far do such differences affect the rates as an index of the general incidence of mental illness in the several groups?

One would be optimistic indeed to expect to get conclusive answers to all of these questions from data at present in existence or ever likely to be. An attempt was made to throw light on some aspects of the problem by the method of correlation so frequently used in earlier chapters of the monograph.

Correlation between Proportions of the Several Racial Origins in Mental Institutions and Related Data.—The dependent variable selected was the number per 100,000 population of each origin in mental institutions. An index of age distribution was computed for each stock by applying specific rates for the total all-Canada population to the age distribution of each stock and expressing the expected rate thus obtained as a percentage of the total rate for all Canada. Recourse was necessary to the indirect method in the absence of a complete cross-classification of inmates by origin and age. Surplus adult males per hundred adult females was chosen as the best corrective for sex differences. The inclusion only of persons 21 years and over seemed likely to yield a more sensitive index because of the relatively light incidence of commitments to mental institutions for persons under 21 and the rapidly increasing incidence after that age. The percentage of adults North American-born was again used as a measure of length of residence. In addition to the above variables, use was made of the percentage of adults urban. Complete data were available for twenty races.

The resulting multiple coefficient $R = .15$ indicates that the five independent factors accounted for practically none of the variability in percentages in mental institutions. This result is clearly at variance with the facts as revealed by earlier analyses in this chapter. Age and sex were shown to be definitely related to the incidence of commitments to mental institutions. As in the case of the correlation on penitentiary inmates, an examination of the independent variables indicates that the lack of association can not be attributed to eccentric behaviour on their part. The conclusion is, therefore, the same as in the former instance, *viz.*, either that the differences are entirely racial, which in this case has been proved incorrect, or that the racial origin records collected by the mental institutions do not correspond with the census classification for the population as a whole. The latter alternative is the only possible one. In this instance the worst cases of confusion appear to have been between the Dutch (Mennonites) and the Russians, and the Ukrainians and the Russians and Austrians.

When these four races are omitted, a coefficient of $R = .37$ was obtained which, though higher than the former, is still small and unreliable. This would seem to indicate that incorrect reporting extends to other portions of the list as well. At any rate no conclusions can be reached as to differences in liability to mental hospital commitment as between the different stocks in Canada until more satisfactory racial origin records for the present inmates of these institutions are available. The records may be expected to improve with the discharge or decease of many of the older inmates concerning whom accurate information as to ethnic derivation is not now and never will be available.

CHAPTER XV

RELIGIONS

In Volume IV of the 1931 Census will be found complete numerical tabulations showing the religions of the various racial origins for Canada and the provinces cross-classified by sex and rural and urban distribution. Similar data are given for cities of 30,000 population and over. Detailed information of this sort has a great variety of uses. It is of peculiar interest to persons concerned with the growth of individual religious faiths or with the religious and racial composition of the population in a selected section or sections of the country. From the point of view of the present monograph, however, data on religions are important merely in so far as they are descriptive of the several racial and nativity groups in the large, and contribute to the explanation of their differences in social behaviour.

The reasons for the population of a given race or birthplace showing a predominant proportion of adherents of this or that faith must be sought in the history of the group—in its cultural antecedents prior to migration to the New World—and as such are also beyond the scope of this chapter. Differences in sex and rural-urban distribution throw little or no light on the peculiar religious distribution of the individual origins. As was pointed out in Chapter III, sex distribution is a function primarily of date, type and volume of immigration. It may to some extent be affected by religion in so far as religion influences fertility, but the reverse is not true. Religious differences do not follow sex lines nor with one or two possible exceptions* do they appear to be influenced thereby; similarly with rural-urban distribution. This is largely a matter of occupational background and economic conditions at and subsequent to the time of settlement in Canada. The fact that certain groups are predominantly rural has little or no causal connection with their religious preferences because, at least in the case of all numerically important religions other groups showing similar preferences are found to be of predominantly urban domicile. The present chapter, therefore, will be confined to an examination of the religions of the several origin and nativity groups *en masse*, i.e., without consideration of either their sex or geographical distribution and will concern itself with the reasons for existing religious affiliations only in so far as those reasons derive from a statistical examination of the data themselves.

In Tables 86 and 87 an attempt has been made to present the essential facts regarding religious distribution for all racial and nativity groups for which separate figures have been tabulated. Table 86 shows the percentage of each race in the four numerically most important religions of that race and the proportion of "all other" faiths. The tabulation includes some twenty-eight individual origins. Table 87 duplicates the analysis by individual province of birth for the Canadian born and country of birth for immigrants. The tables themselves are so clear and simple that no extensive descriptive comment is required. Attention will be confined largely to certain inferences which might not appear to the casual reader.

Race and Religion.—A glance at the first four columns of Table 86 reveals the existence of a very marked degree of religious homogeneity on the part of the majority of the races listed. There is on the other hand, quite marked heterogeneity on the part of a few. The most homogeneous of all origins is the Hebrew with 99.1 p.c. adhering to the Jewish faith. The Hebrews are followed by the French with 97.3 p.c. Roman Catholic, the Italians with 93.4 p.c., the Belgians with 89.4 p.c., the Polish with 85.4 p.c., the Czechs and Slovaks, with 79.8 p.c., the Yugoslavs with 76.0 p.c. and the Hungarians with 72.5 p.c. The Ukrainian, Roumanian and Austrian origins show somewhat smaller proportions of this religion. The Greek Orthodox and the Roman Catholic population of these races combined amount to 94.0, 81.4 and 77.4 p.c., respectively. Certain other races are characterized by almost as heavy concentration in other religious faiths. The Greeks, for example, are predominantly of the Greek Orthodox Church (64.9 p.c.); the Finnish, Icelandic, Norwegian, Swedish and Danish races are largely Lutheran with proportions ranging in descending order from 88.3 p.c. for the Finnish to 55.4 p.c. for the

* The exceptions are confined to a few religions of small numerical importance. For discussion of same see 1931 Census, Vol. I, Chap. IX.

Danish. Most of the balance are adherents of one or another of the major Protestant denominations. If the latter religions may be considered for statistical purposes as more or less similar, the Welsh, the English and the Scottish races also may be regarded as comparatively homogeneous religiously. The four principal religions of the Welsh and English are Protestant and account for 90.5 and 88.4 p.c. of the respective totals, and with the Scottish three principal Protestant denominations account for 81.6 p.c. The Negroes are also quite homogeneous with 80.2 p.c. belonging to three Protestant congregations.

The Irish, on the other hand, are much less consistent. Some 31.3 p.c. reported themselves as belonging to the Roman Catholic Church as against a combined total of 61.2 p.c. to the three Protestant bodies in which they were most largely represented. Slightly over half of the Indians are Roman Catholic and the balance are divided between various Protestant denominations, chiefly the Anglican and the United Churches. Some 53.1 p.c. of the Chinese and 64.6 p.c. of the Japanese are Confucian. With the Chinese, as many as 17.5 p.c. failed to state their religion and 7.0 p.c. said that they had "no religion." Persons of these origins who claimed the Christian religion were adherents for the most part of either the United or Anglican Church bodies.

By all means the least homogeneous religiously of the various races are the German, the Dutch and the Russian. Both the German and Dutch, of course, are predominantly Protestant, but no such general statement can be applied to the Russians. Adherents of the Lutheran and United Churches represented 46.5 p.c. of the population of German extraction resident in Canada in 1931, Roman Catholics constituted 22.8 p.c., Mennonites 7.3 p.c. and other religions 23.4 p.c. Of the Dutch, three Protestant faiths accounted for 51.7 p.c., the Mennonite 25.2 p.c. and the balance of 23.1 p.c. was divided between various sects no one of which could have numbered as many as 8.7 p.c. of the total. Even greater heterogeneity characterizes the Russians of whom 28.2 p.c. were Roman Catholic (including Greek Catholic), 18.0 p.c. belonged to small sects not separately noted, 14.4 p.c. to the Lutheran Church, 13.7 p.c. to the Mennonite and 25.7 p.c. to other assorted religions.

It is a curious fact that those races which show the greatest concentration in one or two principal religions are generally represented by small percentages in the multitude of the numerically less important religions included under "all others" in the fifth column of the table and, conversely, those races which show the greatest dispersion with respect to their principal religions tend to carry that dispersion over into the smaller sects. For example, the Hebrews with an overwhelming proportion of the Jewish faith as a principal religion are scarcely represented among the minor religions. The same is only slightly less characteristic of the French, Italian, Belgian and other races reporting exceedingly large proportions of the Roman Catholic faith, and of the Ukrainian with equally high proportions adhering to the Roman Catholic and Greek Orthodox faiths combined. At the other extreme there are the Russians, Germans and Dutch with no heavy concentration in any one of their four principal religions showing from a fifth to a quarter of their total population distributed among the numerically less important religious bodies.

One limiting factor is of course purely statistical. Where the percentage of the origin in the one or two principal religions is very large, the residuum may be so small as to preclude any significant representation among the smaller religious bodies. Another circumstance which must be taken into account is the fact that the Protestant Church is not a united body and that "other religions" includes many branches of the Protestant faith. One origin group which was predominantly Protestant with respect to principal religions might, therefore, be expected to be represented also among the smaller branches of that faith. This circumstance might well contribute to the moderately high percentages in other religions in the case of the Anglo-Saxon and the Scandinavian races generally. With the Russians the situation is different. The principal causes of religious heterogeneity are underlying differences in racial extraction and cultural background of persons who reported themselves as of Russian racial origin. That group includes a large number of Russian Mennonites (who are really Dutch and have a distinctive culture and religion which they came to Canada to preserve), plus a moderate admixture of Poles, Ukrainians and Germans, in addition to the basic Russian stock. The German origin is fairly homogeneous racially if one admits a close kinship between the Mennonite and the Teuton but the German race in Canada is derived from two or three distinct cultural and religious backgrounds, a circumstance which is doubtless the principal explanation of the religious heterogeneity of that origin group.

The Dutch in Canada are racially somewhat more homogeneous than the Germans. As with the Germans the presence of large numbers of Mennonites with their distinctive culture and religion is certainly a major cause of religious heterogeneity.

Yet there seems to be another factor involved. How is it that the United Church is the principal religion of the Dutch as a race in Canada? There is no United Church in Holland, not even a national church. Apparently the earlier Dutch settlers on this continent were predominantly Protestant. Their numbers in Canada at least are relatively small and as a race they have been long enough on this continent (the Mennonites excluded) for any marked tendency to segregation which may have occurred at the time of settlement to disappear (see Chapter VI). The inevitable consequence seems to have been the breakdown of such distinctive church organizations as they brought with them and their gradual identification with sister Protestant bodies, particularly with the numerically larger denominations which, because of their size and the wide geographical distribution of their organizations, were more likely to have houses of worship conveniently located to the place of residence of persons of Dutch extraction, as they gradually dispersed over the settled area of the country as a whole. A similar process seems to be apparent with the Scandinavians who are overwhelmingly Lutheran on arrival in this country but as time goes on and as they move away from the original settlement tend to identify themselves in increasing numbers with sister Protestant denominations and more particularly with those which are numerically dominant. The following figures furnish concrete statistical evidence of the connection between segregation and the shifts in religious affiliation at present under discussion.

TABLE CX.—PERCENTAGES ADHERING TO THE PRINCIPAL RELIGION OF THE SCANDINAVIAN RACIAL ORIGINS AND INDEX OF SEGREGATION, CANADA, 1931

Racial Origin	P.C. Lutheran		Col. 1 as P.C. of Col. 2	Index of Segre- gation
	Of Race (1)	Of Corre- sponding Nativity (2)		
Danish.....	55	77	72	110
Swedish.....	62	79	79	143
Norwegian.....	74	86	86	188
Icelandic.....	77	83	93	156

The percentage Lutheran among the immigrants from Scandinavian countries varies somewhat. Allowance may be made for this variation by expressing the percentage Lutheran for the race in terms of the percentage Lutheran for the nativity. Clearly a marked association exists between the progress of religious diffusion and the degree of segregation.

Birthplace and Religion.—By way of further illustration and elaboration one might list the figures on principal religions for selected races and corresponding countries of birth. The criterion of selection is a moderately close correspondence between race and birthplace. The data are arranged in two columns for reasons presently to be explained:—

TABLE CXI.—PERCENTAGES ADHERING TO THE PRINCIPAL RELIGION, BY BIRTHPLACE AND CORRESPONDING RACIAL ORIGIN, CANADA, 1931

Birthplace	Principal Religion	P.C. Adhering to Principal Religion of		Birthplace	Principal Religion	P.C. Adhering to Principal Religion of	
		Specified Birth- place	Corre- sponding Racial Origin			Specified Birth- place	Corre- sponding Racial Origin
Denmark.....	Lutheran.....	77	55	Austria.....	Roman Catholic	67	67
Finland.....	Lutheran.....	91	88	Belgium.....	Roman Catholic	92	89
Iceland.....	Lutheran.....	83	77	Czechoslovakia.....	Roman Catholic	80	80
Norway.....	Lutheran.....	86	74	Hungary.....	Roman Catholic	72	73
Sweden.....	Lutheran.....	79	62	Italy.....	Roman Catholic	96	93

Fixing attention for the moment on the first section of the table one notices that the percentage of Lutherans among immigrants from the several countries of birth is in all cases higher and in most cases considerably higher than that among the Canadian residents of the corresponding race. Even with the first generation of immigrants the process of religious affiliation with sister Protestant bodies has made appreciable progress as will be seen from an examination of Columns 2, 3 and 4 in Table 87 for the nativities concerned. When the immigrants and their descendants are combined as they are in the racial classification, however, it is apparent that the proportions which have affiliated with other sister denominations are universally greater than those for the first generation of immigrants alone. The increase is greatest for the Danish and Swedish origins whose indices of segregation are relatively low and smallest for the Finnish whose recency of arrival in Canada has imposed narrow limits on the possible progress of religious assimilation with other Protestant bodies.

Another significant fact is that with three minor exceptions the percentage of both the immigrants and of the race as a whole attaching itself to sister Canadian religious bodies varies directly with the numerical strength of those various bodies in the country as a whole. The United Church which is numerically the largest received the most, the Anglican Communion the next largest number and the Presbyterian Church ranked third. This circumstance is in striking confirmation of the suggestion advanced above, *viz.*, that within the limits of the principal Protestant denominations the choice of religious affiliation is largely a matter of geographical convenience. A Lutheran of Swedish extraction on moving to a new town or city is more likely to find his place of residence adjacent to a United Church than to an Anglican simply because there are more of them. Similarly the chances of his finding a conveniently situated Anglican Church is greater than that of finding a Presbyterian.*

The evidence thus leaves little doubt that the process of religious assimilation of foreign races of the Protestant faith varies directly with length of Canadian residence, varies inversely with the degree of segregation and that its direction is dictated largely by considerations of geographical proximity of an acceptable place of worship. Generally speaking in affiliating with a Canadian Protestant Church the foreigner apparently fails to appreciate or recognize any important difference between the leading Protestant bodies within the country.†

The figures in the right-hand section of the table contrast significantly with those discussed in the preceding paragraph. In three out of five cases the percentage Roman Catholic is practically identical for both the race and the nativity, and for the other two the spread is of moderate dimensions as compared with those in the left-hand section of the table. It is quite apparent that immigrants of the Roman Catholic faith and their descendants continue to adhere to that faith generation after generation. It is true that a slight tendency to change religion appears with the case of the two older urban groups, the Belgian and Italian, but in both cases the tendency has been accentuated by the omission of decimals. The statistical explanation for the general absence of change would seem to be twofold; first, the international character of the Roman Catholic Church and the marked extent to which it has succeeded in extending its facilities to all sections of the Dominion.

There remains but to add a few brief descriptive comments on some of the interesting facts presented in Table 87. Nearly 47 p.c. of the native population of the Dominion were adherents of the Roman Catholic faith in 1931; the various Protestant bodies accounted for all but a small fraction of the remaining 53 p.c. Considerable variation appears in the religious distribution of the Canadian born in the several provinces. The Roman Catholic Church is strongest of course in Quebec where it numbers among its adherents some 90 p.c. of the native population. Its relative numerical strength in the other provinces is smaller than the average for all Canada, the percentages declining in passing from New Brunswick to Prince Edward Island, to Nova Scotia, the Prairie Provinces, Ontario and British Columbia. The numerical importance of other denominations in the aggregate follow the reverse order. The United Church ranks either first or second in seven of the nine provinces. In British Columbia the Anglican leads; in New

* The three exceptions are: the Swedish race which gives Baptist instead of Presbyterian fourth place; immigrants from Iceland which give Unitarian a slight margin over the United Church for second place, and immigrants from Finland for whom the Presbyterian figure is fractionally larger than that of the Anglicans. The case of the Swedes is a direct result of the existence of a fairly vigorous branch of the Baptist denomination in Sweden itself. That of the Icelanders is no doubt attributable to some local cause and that of the Finns would appear to associate with the accident of small numbers.

† The above list of contributory causes is by no means exhaustive. The size of the group is an important factor, and as was mentioned earlier in the text it may be that rural-urban distribution has some slight influence on the progress of the denominational shifts at present under discussion.

Brunswick the Baptists rank second to the Roman Catholics. The Anglican denomination comes second in Quebec and third in four other provinces. The Presbyterian Church has the third largest number of adherents of any church in Prince Edward Island and ranks fourth in Quebec, Ontario, Manitoba and British Columbia. The Lutheran appears among the principal religions in Saskatchewan and Alberta. The reasons for these differences and their magnitude are to be found chiefly in the circumstances of settlement and differences in fertility, in so far as they are capable of statistical explanation.

Equally marked variation occurs in the religious distribution of immigrants. Settlers from the British Isles are largely Protestant, the Anglican Church being most heavily represented. Immigrants from the Scandinavian countries, Finland and Germany are predominantly Lutheran. The Roman Catholic faith is more prevalent than all other religions combined among resident immigrants from most other Continental European countries. Immigrants from Italy, Belgium, Czechoslovakia, France, Hungary and a number of other countries are almost exclusively Roman Catholic. The Greek Orthodox Church claims many adherents among settlers from Roumania, and a moderate proportion among those from Yugoslavia and the Ukraine. Immigration from the last-mentioned countries is, of course, predominantly Roman Catholic. The case of Russia is peculiar. Jews constitute over 35 p.c. of the resident immigrants from that country, Mennonites rank second with 19 p.c. and Roman Catholics and Lutherans third and fourth with approximately 14 p.c. each. Jews are also prominent among immigrants from Poland and Roumania. The presence of native Baptist Churches in Germany and Sweden accounts for this denomination appearing among the first four religions for immigrants from these countries. A comparison of the religious distribution of immigrants from Holland with that of the Dutch race suggests that the Roman Catholic faith is much more largely represented in recent than in earlier immigration from that country. The Chinese and Japanese are, of course, largely Confucian. How far the figures for these races genuinely reflect the degree of religious assimilation that has actually taken place is an open question. The religious heterogeneity of immigration from the United States reflects the racial and religious heterogeneity of a newly settled region whose population structure in many respects resembles that of our own Dominion.

Despite the many minor causes which operate from time to time and place to place, the evidence in this and preceding chapters points to the conclusion that race and nativity are the greatest single factors in explaining the existing religious distribution of the population of the Dominion and that in the past, immigration, emigration and differential fertility constituted the major agencies of change. In the early years of settlement the operation of the one set of agencies tended to offset the other; in recent decades the offsetting influence has been progressively less marked. It therefore appears perfectly safe to conclude that in the absence of any large volume of immigration or emigration in the predictable future, differential fertility will bring about more rapid and more radical changes in the religious composition of the population of this country than have occurred at any time since Confederation.



PART II

TABLE 1. Population of European racial origins cross-classified by mother tongue, birthplace and racial intermarriage,¹ Canada, 1931

Racial Origin	Mother Tongue	No.	P.C.	Birthplace	No.	P.C.	Intermarriage	P.C.
French.....	French.....	2,782,287	95.0	France and Switzerland....	16,645	0.6	French and Swiss	95.0
Other.....	145,703	100.0	Other.....	2,911,345	100.0	Other.....	100.0	
English.....	139,824	96.0	British Territory and U.S.A.	2,909,432	99.9	British.....	81.3	
Flemish.....	254	0.2	Belgium.....	929	0.0	Belgian.....	2.0	
German.....	1,650	1.1	Germany.....	96	0.0	German.....	6.4	
Italian.....	300	0.2	Italy.....	77	0.0	Italian.....	1.0	
Scandinavian.....	121	0.1	Scandinavia.....	67	0.0	Scandinavian.....	2.3	
Polish.....	69	0.0	Poland.....	21	0.0	Polish.....	1.1	
Russian.....	26	0.0	Russia.....	40	0.0	Russian.....	0.2	
Ukrainian.....	64	0.0	Ukraine.....	1	0.0	Ukrainian.....	0.8	
Various.....	3,395	2.3	Various.....	632	0.0	Various.....	4.6	
Belgian.....	Flemish and French.....	23,362	84.7	Belgium and France.....	15,428	55.9	Belgian and French.....	73.3
Other.....	4,223	100.0	Other.....	12,157	100.0	Other.....	100.0	
English.....	3,710	87.9	British Territory and U.S.A.	12,028	98.9	British.....	59.8	
Dutch.....	137	3.2	Holland.....	70	0.6	Dutch.....	5.6	
German.....	261	5.9	Germany and Austria.....	16	0.1	German.....	12.3	
Polish.....	13	0.3	Poland.....	5	0.0	Polish.....	7.0	
Russian.....	11	0.3	Russia.....	1	0.0	Russian.....	1.1	
Various.....	101	2.4	Various.....	38	0.3	Various.....	14.2	
German.....	German.....	264,515	55.9	Germany, Switzerland and Austria.....	46,546	9.8	German, Austrian, etc.....	72.5
Other.....	209,029	100.0	Other.....	426,998	100.0	Other.....	100.0	
English.....	202,072	96.7	British Territory and U.S.A.	375,514	87.9	British.....	70.0	
Dutch.....	591	0.3	Holland.....	107	0.0	Dutch.....	2.4	
French and Flemish.....	2,705	1.3	France and Belgium.....	269	0.1	French and Belgian.....	9.9	
Magyar.....	334	0.2	Hungary.....	2,072	0.5	Hungarian.....	1.2	
Serbo-Croatian.....	38	0.0	Yugoslavia.....	2,821	0.7	Yugoslavia.....	0.2	
Scandinavian.....	458	0.2	Scandinavia.....	294	0.1	Scandinavian.....	5.6	
Polish.....	938	0.4	Poland.....	10,344	2.4	Polish.....	2.8	
Russian.....	661	0.3	Russia.....	28,416	6.7	Russian.....	2.7	
Roumanian.....	117	0.1	Roumania.....	5,302	1.2	Roumanian.....	0.5	
Ukrainian.....	494	0.2	Ukraine.....	210	0.1	Ukrainian.....	2.1	
Various.....	531	0.3	Various.....	1,649	0.4	Various.....	2.7	
Dutch.....	Dutch.....	25,018	10.8	Holland.....	10,330	6.9	Dutch.....	54.6
Other.....	123,944	100.0	Other.....	138,632	100.0	Other.....	100.0	
English.....	96,804	78.1	British Territory and U.S.A.	129,175	93.2	British.....	76.6	
German and Flemish.....	26,564	21.4	Germany and Belgium.....	272	0.2	German and Belgian.....	10.3	
French.....	190	0.2	France.....	12	0.0	French.....	8.3	
Scandinavian.....	84	0.1	Scandinavia.....	43	0.0	Scandinavian.....	2.5	
Russian.....	190	0.2	Russia.....	8,681	6.3	Russian.....	0.7	
Various.....	110	0.1	Various.....	449	0.3	Various.....	3.6	
Danish.....	Danish.....	20,884	61.2	Denmark.....	16,739	49.1	Danish.....	42.6
Other.....	13,234	100.0	Other.....	17,359	100.0	Other.....	100.0	
English.....	12,210	92.3	British Territory and U.S.A.	17,003	97.9	British.....	63.2	
Germanic, etc.....	455	3.4	Germany, etc.....	113	0.7	German.....	9.0	
French.....	107	0.8	France.....	1	0.0	French.....	4.4	
Other Scandinavian.....	416	3.1	Other Scandinavia.....	131	0.8	Other Scandinavian.....	17.2	
Various.....	46	0.3	Various.....	111	0.6	Various.....	6.2	
Icelandic.....	Icelandic.....	15,625	80.6	Iceland.....	5,614	29.0	Icelandic.....	57.4
Other.....	3,757	100.0	Other.....	13,768	100.0	Other.....	100.0	
English.....	3,597	95.7	British Territory and U.S.A.	13,735	99.8	British.....	66.1	
German.....	23	0.6	Germany.....	13	0.0	German.....	10.1	
French.....	9	0.2	France.....	1	0.0	French.....	8.3	
Other Scandinavian.....	51	1.4	Other Scandinavia.....	22	0.2	Other Scandinavian.....	6.6	
Various.....	77	2.0	Various.....	11	0.1	Various.....	8.9	
Swedish.....	Swedish.....	54,291	66.8	Sweden.....	32,705	41.5	Swedish.....	40.1
Other.....	27,013	100.0	Other.....	47,601	100.0	Other.....	100.0	
English.....	24,624	91.1	British Territory and U.S.A.	45,706	96.0	British.....	55.3	
Germanic, etc.....	337	1.2	Germany, etc.....	27	0.1	German.....	10.5	
French.....	128	0.5	France.....	6	0.0	French.....	6.0	
Other Scandinavian.....	1,543	5.7	Other Scandinavia.....	708	1.5	Other Scandinavian.....	19.2	
Various.....	383	1.4	Various.....	1,154	2.6	Various.....	9.0	

¹ Racial intermarriage is measured by the proportions of married males and females married to persons of specified racial origins as indicated by the parentage of children born in 1930-32 inclusive, in Canada.

² 37,555 Dutch Mennonites in Canada. These usually speak a dialect more akin to German.

TABLE 1. Population of European racial origins cross-classified by mother tongue, birthplace and racial intermarriage,¹ Canada, 1931—Con.

Racial Origin	Mother Tongue	No.	P.C.	Birthplace	No.	P.C.	Intermarriage	P.C.
Norwegian	Norwegian	61,851	66.3	Norway	31,850	34.2	Norwegian	49.5
	Other	31,392	100.0	Other	61,393	100.0	Other	100.0
	English	29,474	93.9	British Territory and U.S.A.	60,982	99.3	British	61.0
	German	237	0.8	Germany	11	0.0	German	12.4
	French	271	0.9	France	3	0.0	French	5.7
	Other Scandinavian	1,273	4.1	Other Scandinavia	328	0.5	Other Scandinavian	15.4
	Various	137	0.4	Various	69	0.1	Various	5.5
Finnish	Finnish	39,270	89.5	Finland	29,267	66.7	Finnish	87.1
	Other	4,008	100.0	Other	14,618	100.0	Other	100.0
	English	2,082	45.4	British Territory and U.S.A.	13,904	95.1	British	57.0
	German	91	2.0	Germany	1	0.0	German	9.8
	French	44	1.0	France	1	0.0	French	0.4
	Scandinavian	2,096	45.5	Scandinavia	105	0.7	Scandinavian	10.7
	Russian	69	1.5	Russia	84	0.6	Russian	3.2
	Various	213	4.6	Various	521	3.6	Various	12.7
Italian	Italian	84,634	86.2	Italy	42,311	43.1	Italian	77.0
	Other	13,539	100.0	Other	55,802	100.0	Other	100.0
	English	10,330	76.3	British Territory and U.S.A.	55,103	95.0	English	45.1
	German and Austrian	121	0.9	Germany, Switzerland and Austria	323	0.6	German, etc.	5.6
	French	2,850	21.1	France	164	0.3	French	35.6
	Serbo-Croatian	2	0.0	Yugoslavia	20	0.0	Yugoslavia	0.3
	Czech and Slovak	20	0.1	Czechoslovakia	6	0.0	Czech and Slovak	0.7
	Various	216	1.6	Various	206	0.4	Various	12.6
Austrian	German and Austrian	22,131	45.5	Austria, Germany and Switzerland	16,164	33.2	Austrian, German, etc.	80.1
	Other	28,508	100.0	Other	32,475	100.0	Other	100.0
	English	3,948	12.4	British Territory and U.S.A.	27,320	84.1	British	30.9
	French	190	0.7	France	41	0.1	French	6.7
	Italian	110	0.4	Italy	41	0.1	Italian	3.6
	Roumanian	796	3.0	Roumania	1,129	3.7	Roumanian	3.1
	Magyar	867	3.3	Hungary	97	0.4	Hungarian	1.0
	Czech and Slovak	1,369	5.2	Czechoslovakia	699	2.2	Czech and Slovak	16.0
	Polish	3,063	11.5	Poland	2,023	6.2	Polish	9.8
	Russian	743	2.8	Russia	205	0.6	Russian	18.5
	Ukrainian	12,753	48.1	Ukraine	219	0.7	Ukrainian	4.1
	Serbo-Croatian	573	2.2	Yugoslavia	628	1.9	Yugoslavia	6.3
	Various	101	0.4	Various	43	0.1	Various	6.3
Hungarian	Magyar	34,149	84.1	Hungary	25,122	61.9	Hungarian	89.9
	Other	6,433	100.0	Other	15,460	100.0	Other	100.0
	English	1,584	24.6	British Territory and U.S.A.	11,955	77.3	British	19.8
	Germanic, etc.	3,724	57.9	Germany, etc.	361	1.9	German, etc.	35.7
	French	32	0.5	France	5	0.0	French	8.0
	Roumanian	124	1.9	Roumania	1,201	7.8	Roumanian	4.0
	Czech and Slovak	596	9.1	Czechoslovakia	1,325	8.6	Czech and Slovak	6.4
	Polish	62	1.0	Poland	28	0.2	Polish	3.2
	Serbo-Croatian	69	1.1	Yugoslavia	606	3.9	Yugoslavia	4.8
	Ukrainian	123	1.9	Ukraine	4	0.0	Ukrainian	18.1
	Various	127	2.0	Various	33	0.2	Various	6.3
Roumanian	Roumanian	16,196	55.7	Roumania	12,989	44.7	Roumanian	67.4
	Other	12,860	100.0	Other	16,076	100.0	Other	100.0
	English	2,464	19.2	British Territory and U.S.A.	15,082	93.8	British	21.5
	German and Austrian	3,668	28.5	Germany and Austria	408	2.5	German	21.0
	Magyar	885	6.9	Hungary	151	0.9	Hungarian	2.1
	Polish	482	3.7	Poland	78	0.5	Polish	17.9
	Russian	511	4.0	Russia	60	0.4	Russian	9.2
	Ukrainian	4,459	34.7	Ukraine	13	0.1	Ukrainian	19.0
	Various	391	3.0	Various	284	1.8	Various	9.3

¹ Accuracy of statement suspected.

TABLE 1. Population of European racial origins cross-classified by mother tongue, birthplace and racial intermarriage,¹ Canada, 1931—Con.

Racial Origin	Mother Tongue	No.	P.C.	Birthplace	No.	P.C.	Intermarriage	P.C.
Bulgarian	Bulgarian	2,290	72.5	Bulgaria	1,344	42.5	Bulgarian	37.3
	Other	870	100.0		1,816	100.0	Other	100.0
	English	420	48.3	British Territory and U.S.A.	1,077	59.3	British	38.0
	German and Austrian	45	5.2	Germany and Austria	13	0.7	German	10.8
	French and Flemish	70	8.0	France and Belgium	7	0.4	French, etc.	16.2
	Greek	104	12.0	Greece	631	34.7	Greek	11.1
	Romanian	18	2.1	Roumania	11	0.6	Romanian	2.7
	Magyar	37	4.4	Hungary	2	0.1	Hungarian	13.5
	Polish	31	3.6	Poland	2	0.1	Polish	1.1
	Russian	47	5.4	Russia	2	0.1	Russian	2.3
	Serbo-Croatian	34	3.9	Yugoslavia	67	3.7	Yugoslavic	11.4
	Czech and Slovak	20	2.3	Czechoslovakia	1	0.1	Czech and Slovak	6.4
	Ukrainian	54	6.2	Ukraine	5	0.3	Ukrainian	18.8
	Various	15	1.7	Various	1	0.0	Various	0.0
Czech and Slovak	Czech and Slovak	24,399	80.3	Czechoslovakia	13,551	62.0	Czech and Slovak	79.2
	Other	6,002	100.0		11,550	100.0	Other	100.0
	English	2,230	37.2	British Territory and U.S.A.	9,699	84.0	British	25.7
	German, etc.	1,153	19.2	Germany, etc.	424	3.7	German	11.4
	French	37	0.6	France	6	0.1	French	5.7
	Romanian	41	0.7	Roumania	173	1.5	Romanian	9.1
	Magyar	697	11.6	Hungary	117	1.0	Hungarian	22.9
	Polish	518	8.6	Poland	507	4.4	Polish	4.0
	Russian	253	4.2	Russia	145	1.3	Russian	2.3
	Serbo-Croatian	167	2.8	Yugoslavia	389	3.4	Yugoslavic	11.4
	Ukrainian	755	12.6	Ukraine	28	0.2	Ukrainian	6.4
	Various	151	2.5	Various	62	0.5	Various	84.3
Yugoslavic	Serbo-Croatian	9,432	58.3	Yugoslavia	12,010	74.3	Yugoslavic	84.3
	Other	6,742	100.0		4,164	100.0	Other	100.0
	English	680	10.1	British Territory and U.S.A.	3,455	83.7	British	21.4
	German and Austrian	1,276	18.9	Germany and Austria	173	4.2	German	8.3
	Romanian	148	2.2	Roumania	163	3.9	Romanian	3.6
	Magyar	238	3.5	Hungary	64	1.5	Hungarian	9.5
	Czech and Slovak	3,815	56.6	Czechoslovakia	168	4.0	Czech and Slovak	10.7
	Bulgarian	40	0.6	Bulgaria	3	0.1	Bulgarian	7.1
	Polish	149	2.1	Poland	31	0.7	Polish	17.9
	Russian	87	1.3	Russia	14	0.3	Russian	1.2
	Ukrainian	120	1.8	Ukraine	6	0.1	Ukrainian	10.8
	Greek	31	0.5	Greece	16	0.4	Greek	57.9
	Italian	31	0.5	Italy	7	0.2	Italian	10.0
	Various	136	2.0	Various	34	0.8	Various	47.5
Greek	Greek	6,940	73.5	Greece	4,853	51.4	Greek	57.9
	Other	2,504	100.0		4,501	100.0	Other	100.0
	English	1,823	72.8	British Territory and U.S.A.	4,270	93.1	British	47.5
	German	34	1.4	Germany	16	0.3	German	5.1
	French	216	8.6	France	3	0.1	French	18.1
	Bulgarian	273	10.9	Bulgaria	21	0.5	Bulgarian	1.0
	Polish	17	0.7	Poland	13	0.3	Polish	4.0
	Russian	25	1.0	Russia	5	0.1	Russian	5.1
	Ukrainian	27	1.1	Ukraine	7	0.2	Ukrainian	6.1
	Asiatic	29	1.2	Asia	197	4.3	Asiatic	13.1
	Various	60	2.4	Various	52	1.1	Various	78.0
Polish	Polish	104,753	72.0	Poland	70,617	48.6	Polish	78.0
	Other	40,720	100.0		74,856	100.0	Other	100.0
	English	10,026	24.6	British Territory and U.S.A.	70,484	94.2	British	13.9
	German, etc.	6,812	16.7	Germany, etc.	2,068	2.9	German	13.0
	French	305	0.7	France	31	0.0	French, etc.	7.8
	Romanian	106	0.3	Roumania	401	0.5	Romanian	2.5
	Czech and Slovak	408	1.0	Czechoslovakia	209	0.3	Czech and Slovak	0.5
	Bulgarian	1,667	4.1	Bulgaria	1,045	1.4	Bulgarian	4.0
	Russian	20,992	51.4	Russia	323	0.4	Russian	52.4
	Ukrainian	404	1.0	Ukraine	301	0.4	Ukrainian	5.9
	Various	874	1.9	Various	1,450	2.6	Various	9.3
Russian	Russian	43,251	49.1	Russia	32,452	36.8	Russian	70.6
	Other	44,867	100.0		55,696	100.0	Other	100.0
	English	8,894	19.8	British Territory and U.S.A.	50,884	91.4	British	21.3
	German, etc.	30,770	68.6	Germany, etc.	431	0.8	German	29.1
	French	235	0.5	France	19	0.0	French, etc.	6.7
	Polish	1,357	3.0	Poland	2,697	4.8	Polish	15.2
	Ukrainian	2,739	6.1	Ukraine	224	0.4	Ukrainian	18.4
	Various	874	1.9	Various	1,450	2.6	Various	9.3

TABLE 1. Population of European racial origins cross-classified by mother tongue, birthplace and racial intermarriage,¹ Canada, 1931—Con.

Racial Origin	Mother Tongue	No.	P.C.	Birthplace	No.	P.C.	Intermarriage	P.C.
Ukrainian	Ukrainian	209,686	93.1	Ukraine	12,263	5.5	Ukrainian	90.2
	Other	15,427	100.0	Other	212,910	100.0	Other	100.0
	English	5,501	35.7	British Territory and U.S.A.	129,076	60.7	British	10.0
	German	2,178	14.1	Germany	10,410	4.9	German	11.8
	French	114	0.7	France	12	0.0	French	4.0
	Roumanian	229	1.7	Roumania	10,539	4.9	Roumanian	5.5
	Magyar ²	450	3.0	Hungary	376	0.2	Hungarian	0.3
	Polish	5,535	36.0	Poland	59,612	28.0	Polish	59.6
	Russian ³	920	5.9	Russia	2,158	1.0	Russian	2.6
	Czech and Slovak	279	1.8	Czechoslovakia	480	0.2	Czech and Slovak	2.6
Hebrew	Various	221	1.4	Various	287	0.1	Various	3.7
	Yiddish	149,179	95.2	Total	156,729	100.0	Hebrew	97.9
	Other	7,547	100.0	British Territory and U.S.A.	77,183	49.2	British	54.7
	English	3,691	48.9	Germany, etc.	3,082	2.0	German	4.7
	German	482	6.4	France, etc.	731	0.5	French	17.2
	French	67	0.9	Roumania	7,627	4.9	Roumanian	...
	Roumanian	192	2.6	Hungary	402	0.3	Hungarian	...
	Magyar	92	1.2	Poland	24,988	16.0	Polish	3.1
	Polish	1,098	14.6	Russia	40,429	26.8	Russian	9.4
	Russian	1,762	23.4	Ukraine	342	0.2	Ukrainian	6.3
Hebrew	Ukrainian	65	1.9	Various	1,830	1.1	Various	4.6
	Various	7	...					

TABLE 2. Certain European races the accuracy of whose stated numbers is suspect in the light of data on mother tongue, birthplace and intermarriage, Canada, 1931

Racial Origin	Mother Tongue	No.	P.C.	Birthplace	No.	P.C.	Intermarriage	No. (estimated)	P.C.
Austrian	Italian	110	0.4	Italy	41	0.1	Italian	-	-
	Czech and Slovak	1,369	5.2	Czechoslovakia	999	2.2	Czech and Slovak	39	1.0
	Ukrainian	12,753	48.1	Ukraine	219	0.7	Ukrainian	715	18.5
Finnish	Scandinavian (mostly Swedish)	2,050	44.7	Scandinavia	100	0.7	Scandinavian	267	10.7
Hungarian	German, etc.	3,724	57.9	Germany, etc.	301	1.9	German, etc.	729	35.7
Roumanian	German	3,540	27.5	Germany, etc.	408	2.5	German	801	21.0
	Magyar	885	6.9	Hungary	151	0.9	Hungarian	80	2.1
	Ukrainian	4,459	34.3	Ukraine	13	0.1	Ukrainian	725	19.0
Czech and Slovak	German	1,153	19.2	Germany	424	3.7	German	379	11.4
	Magyar	697	11.6	Hungary	117	1.0	Hungarian	303	9.1
	Ukrainian	756	12.6	Ukraine	28	0.2	Ukrainian	379	11.4
Yugoslavian	German	1,277	18.9	Germany	192	4.6	German	112	8.3
	Czech and Slovak	3,815	56.6	Czechoslovakia	168	4.0	Czech and Slovak	129	9.5
Greek	Bulgarian	273	10.9	Bulgaria	21	0.8	Bulgarian	15	1.0
Polish	German	6,802	16.7	Germany	2,070	2.8	German	1,699	13.0
	Czech and Slovak	408	1.0	Czechoslovakia	209	0.3	Czech and Slovak	65	0.5
	Ukrainian	20,992	51.6	Ukraine	325	0.4	Ukrainian	16,774	52.4
Russian	German	31,211	69.6	Germany	238	0.4	German	2,934	29.1
Ukrainian	Magyar	450	3.0	Hungary	376	0.2	Hungarian	26	0.3
	Russian	920	5.9	Russia	2,158	1.0	Russian	215	2.5

Racial Origin	Number Stated	Corrections (See Table 2)						Corrected Total (estimated)	
		Less			Add				
		To	No.	Total	From	No.	Total		
Austrian.....	48,639	Italian.....	104	48,639					
		Czech and Slovak....	1,230						
		Ukrainian.....	12,007						
		German.....	35,298						
Roumanian.....	29,056	German.....	2,681	7,196				21,860	
		Hungarian.....	783						
		Ukrainian.....	3,732						
Czech and Slovak....	30,401	German.....	713	1,402	Austrian.....	1,230		5,205	
		Hungarian.....	377		Yugoslavia.....	3,062			
		Ukrainian.....	372		Polish.....	313			
Yugoslavia.....	15,174	German.....	1,138	4,800				11,374	
		Czech and Slovak....	3,662						
Greek.....	9,444	Bulgarian.....	255	255				9,189	
Polish.....	145,503	German.....	4,807	9,282				136,211	
		Ukrainian.....	4,172						
		Czech and Slovak....	313						
Russian.....	88,148	German.....	28,243	28,243	Ukrainian.....	397		397	
Ukrainian.....	225,113	Hungarian.....	370	767	Austrian.....	12,007		20,283	
		Russian.....	397		Roumanian.....	3,732			
					Czech and Slovak....	372			
					Polish.....	4,172			
Italian.....	98,173			2,952	Austrian.....	104	104	98,277	
Hungarian.....	40,582	German.....	2,059		Roumanian.....	783			
					Czech and Slovak....	377			
					Ukrainian.....	370	1,530	39,160	
Bulgarian.....	3,160			1,778	Greek.....	255	255	3,415	
German.....	473,544								
					Austrian.....	35,298			
					Roumanian.....	2,681			
Finnish.....	43,885	Swedish.....	1,778	1,778	Czech and Slovak....	713		75,632	
Swedish.....	81,306				Yugoslavia.....	1,138			
					Polish.....	4,807			
					Russian.....	28,243			
					Hungarian.....	2,952			
					Finnish.....	1,778	1,778	83,084	

TABLE 4. Population, by racial origin and percentage distribution according to the four principal countries of birth, religions, mother tongues and racial preferences of males in intermarriage, Canada, 1931

No.	Racial Origin	Population	Birthplace					Religion					Mother Tongue					Race of Wife ^a					No.												
			Principal	P.C.	Second Largest	P.C.	Third Largest	P.C.	Fourth Largest	P.C.	Principal	P.C.	Second Largest	P.C.	Third Largest	P.C.	Fourth Largest	P.C.	Principal	P.C.	Second Largest	P.C.		Third Largest	P.C.	Fourth Largest	P.C.								
1	English.....	2,741,410	Canada.....	70.0	England.....	24.9	United States.....	3.1	Newfoundland.....	0.7	Anglican.....	41.1	United Church.....	31.3	Baptist.....	8.7	Presbyterian.....	7.1	English.....	69.8	Gaelic.....	0.6	French.....	0.6	Various ^b	0.1	English.....	69.9	Scottish.....	11.8	Irish.....	5.7	French.....	3.8	1
2	Irish.....	1,230,836	Canada.....	88.6	Ireland.....	5.2	United States.....	3.8	England.....	1.2	United Church.....	32.1	Roman Catholic.....	17.6	Presbyterian.....	11.1	Anglican.....	9.4	English.....	43.5	Gaelic.....	22.8	Scottish.....	16.7	French.....	14.3	French.....	41.3	Scottish.....	16.7	French.....	14.3	French.....	14.3	2
3	Scottish.....	1,344,359	Canada.....	74.9	Scotland.....	19.4	United States.....	2.6	England.....	1.2	United Church.....	37.7	Presbyterian.....	34.2	Anglican.....	10.2	Roman Catholic.....	9.9	English.....	39.6	Welsh.....	18.6	Scottish.....	16.7	French.....	16.7	French.....	10.4	Irish.....	10.4	Irish.....	10.4	Irish.....	10.4	3
4	Welsh, etc.....	62,494	Canada.....	53.2	Wales.....	26.8	England.....	6.1	United States.....	3.9	United Church.....	35.7	Anglican.....	34.7	Baptist.....	10.8	Presbyterian.....	9.9	English.....	59.8	French.....	16.3	Scottish.....	7.4	Scottish.....	7.4	Scottish.....	3.8	5	5	5	5	5	4	
5	Belgium.....	27,533	Belgium.....	54.9	Canada.....	40.0	United States.....	2.6	France.....	1.0	Roman Catholic.....	69.4	United Church.....	3.8	Anglican.....	3.9	Presbyterian.....	8.7	English.....	53.0	English.....	17.4	Scottish.....	9.4	French.....	8.8	French.....	8.8	French.....	8.8	French.....	8.8	French.....	8.8	5
6	Dutch.....	145,602	Canada.....	79.9	Holland.....	6.9	United States.....	6.8	Russia.....	5.7	United Church.....	32.1	Mennonite.....	23.2	Anglican.....	10.9	Baptist.....	8.7	French.....	65.0	German.....	17.6	Dutch.....	16.8	Flemish.....	0.2	Dutch.....	53.0	English.....	9.4	French.....	8.8	French.....	8.8	6
7	French.....	2,627,890	Canada.....	87.4	United States.....	11.1	France.....	0.9	England.....	0.1	Roman Catholic.....	67.3	United Church.....	1.0	Anglican.....	0.8	Presbyterian.....	0.9	English.....	65.0	German.....	17.6	Dutch.....	16.8	Flemish.....	0.2	Dutch.....	53.0	English.....	9.4	French.....	8.8	French.....	8.8	7
8	Italian.....	96,170	Canada.....	35.1	Italy.....	43.1	United States.....	2.1	Other British Possessions.....	0.5	Roman Catholic.....	63.4	United Church.....	2.1	Anglican.....	1.5	Presbyterian.....	1.0	Italian.....	61.2	English.....	10.9	French.....	2.4	German.....	0.1	Italian.....	75.0	French.....	8.2	English.....	5.0	Irish.....	2.6	8
9	Danish.....	34,118	Denmark.....	49.1	Canada.....	37.4	United States.....	11.4	England.....	0.6	Lutheran.....	53.4	United Church.....	16.2	Anglican.....	9.3	Presbyterian.....	0.1	Danish.....	61.2	English.....	33.8	German.....	1.3	Norwegian.....	0.1	Danish.....	43.7	English.....	16.3	Scottish.....	9.0	Irish.....	6.5	9
10	Icelandic.....	19,332	Canada.....	65.4	Iceland.....	29.0	United States.....	5.9	Ireland.....	0.1	Lutheran.....	75.0	United Church.....	8.4	Small sects.....	3.9	Anglican.....	3.0	Icelandic.....	61.2	English.....	16.0	Various.....	0.3	German.....	0.1	Icelandic.....	61.2	English.....	11.5	Scottish.....	8.0	Irish.....	6.5	10
11	Norwegian.....	95,243	Canada.....	42.1	Norway.....	34.2	United States.....	13.3	Sweden.....	0.9	Lutheran.....	75.0	United Church.....	11.5	Anglican.....	3.9	Presbyterian.....	3.0	Norwegian.....	61.2	English.....	16.0	Various.....	0.3	German.....	0.1	Norwegian.....	61.2	English.....	11.5	Scottish.....	8.0	Irish.....	6.5	11
12	Swedish.....	81,308	Canada.....	42.6	Sweden.....	41.6	United States.....	13.3	Finland.....	1.1	Lutheran.....	62.3	United Church.....	15.1	Anglican.....	3.9	Baptist.....	3.0	Swedish.....	66.8	English.....	30.3	Norwegian.....	1.7	German.....	0.4	Swedish.....	40.2	English.....	17.2	Norwegian.....	10.0	Scottish.....	8.0	12
13	Austrian, n.o.s. ¹	46,639	Canada.....	53.7	Austria.....	33.0	Poland.....	4.2	Roumania.....	2.5	Roman Catholic.....	67.4	Lutheran.....	12.2	Greek Orthodox.....	10.0	United Church.....	3.2	Austrian.....	40.4	Ukrainian.....	29.2	English.....	12.9	Polish.....	6.3	Austrian.....	39.3	English.....	20.8	French.....	10.7	Ukrainian.....	7.3	14
14	Bulgarian.....	1,160	Bulgaria.....	42.3	Czechoslovakia.....	5.9	Germany.....	10.3	Yugoslavia.....	2.1	Anglican.....	31.1	Roman Catholic.....	72.3	Presbyterian.....	10.3	Lutheran.....	4.2	Bulgarian.....	54.1	English.....	42.7	French.....	2.1	German.....	0.2	Bulgarian.....	72.3	English.....	9.2	Irish.....	3.0	Scottish.....	4.6	15
15	German.....	473,544	Canada.....	69.5	Germany.....	57.8	Canada.....	3.9	Roumania.....	3.0	Roman Catholic.....	72.3	Presbyterian.....	10.3	Lutheran.....	4.2	United Church.....	4.2	German.....	54.1	German.....	9.2	English.....	3.9	German.....	1.3	Hungarian.....	60.7	German.....	2.8	English.....	0.9	French.....	0.7	16
16	Hungarian.....	29,026	Hungary.....	50.7	Roumania.....	44.7	Austria.....	1.9	United States.....	1.0	Greek Orthodox.....	42.0	Roman Catholic.....	39.4	United Church.....	6.7	United Church.....	3.6	Roumanian.....	55.7	Ukrainian.....	15.3	German.....	12.6	English.....	8.5	Roumanian.....	66.7	Ukrainian.....	6.4	Polish.....	4.0	English.....	3.0	17
17	Roumanian.....	16,174	Yugoslavia.....	74.3	Canada.....	20.0	United States.....	1.0	Czechoslovakia.....	1.0	Roman Catholic.....	76.9	Greek Orthodox.....	15.4	Lutheran.....	2.4	United Church.....	1.9	Serbo-Croatian.....	48.3	Slovak.....	29.4	English.....	7.0	English.....	4.2	Yugoslavian.....	54.4	English.....	7.7	Ukrainian.....	2.1	Polish.....	1.7	18
18	Czech and Slovak.....	30,401	Czechoslovakia.....	65.0	Canada.....	27.8	United States.....	4.0	Poland.....	1.7	Roman Catholic.....	76.9	Lutheran.....	5.4	United Church.....	4.1	Greek Orthodox.....	2.7	Slovak.....	62.1	Bohemian.....	18.1	English.....	7.3	German.....	3.8	Czech and Slovak.....	78.0	Polish.....	3.8	English.....	2.6	German.....	2.6	19
19	Finnish.....	41,882	Finland.....	66.7	Canada.....	28.2	United States.....	3.4	Other European.....	1.2	Lutheran.....	88.3	United Church.....	3.4	Presbyterian.....	2.1	Anglican.....	1.9	Finnish.....	69.8	English.....	4.8	Swedish.....	4.7	Various ^b	0.4	Finnish.....	88.0	English.....	3.6	Scottish.....	1.6	Irish.....	1.3	20
20	Lithuanian.....	5,570	Lithuania.....	63.0	Canada.....	28.4	England.....	2.1	United States.....	1.2	United Church.....	85.4	Lutheran.....	4.7	Greek Orthodox.....	3.8	United Church.....	1.4	Polish.....	72.0	Ukrainian.....	14.4	English.....	10.1	German.....	3.1	Russian.....	72.0	Ukrainian.....	10.7	German.....	1.9	French.....	1.4	21
21	Polish.....	145,026	Poland.....	47.0	United States.....	34.0	Canada.....	29.4	Poland.....	3.1	Roman Catholic.....	38.0	Small sects.....	18.0	Lutheran.....	13.7	Russian.....	10.1	Ukrainian.....	69.1	German.....	34.4	English.....	10.1	Ukrainian.....	6.9	Ukrainian.....	90.0	Polish.....	15.2	Roumanian.....	0.4	Austrian.....	0.3	22
22	Russian.....	85,143	Canada.....	84.0	Russia.....	65.0	United States.....	3.1	Poland.....	0.7	Roman Catholic.....	69.4	Greek Orthodox.....	24.0	United Church.....	1.6	Presbyterian.....	0.8	Russian.....	88.0	Polish.....	2.5	English.....	2.4	German.....	0.9	Ukrainian.....	88.0	Polish.....	15.2	Roumanian.....	0.4	Austrian.....	0.3	23
23	Ukrainian.....	225,115	Canada.....	57.0	Poland.....	26.8	Ukraine.....	6.4	Roumania.....	4.7	Roman Catholic.....	69.4	Greek Orthodox.....	24.0	United Church.....	1.6	Presbyterian.....	0.8	Ukrainian.....	88.0	Polish.....	2.5	English.....	2.4	German.....	0.9	Ukrainian.....	88.0	Polish.....	15.2	Roumanian.....	0.4	Austrian.....	0.3	24
24	Greek.....	5,444	Greece.....	51.4	Canada.....	26.3	United States.....	1.9	Turkey.....	0.8	Greek Orthodox.....	64.6	Roman Catholic.....	17.2	Anglican.....	10.0	United Church.....	3.1	Yiddish.....	95.2	English.....	2.4	Russian.....	1.1	Polish.....	0.7	Hebrew.....	96.8	English.....	0.9	Irish.....	0.4	French.....	0.4	25
25	Hebrew.....	155,728	Canada.....	45.3	Russia.....	15.9	Roumania.....	4.9	Roumania.....	4.9	Jewish.....	64.6	Roman Catholic.....	17.2	Anglican.....	10.0	United Church.....	3.1	Yiddish.....	95.2	English.....	2.4	Russian.....	1.1	Polish.....	0.7	Hebrew.....	96.8	English.....	0.9	Irish.....	0.4	French.....	0.4	26
26	Chinese.....	40,519	China.....	83.3	Canada.....	11.6	United States.....	0.1	Confucian, etc.....	0.1	Confucian, etc.....	53.1	Not stated.....	17.5	United Church.....	10.0	No religion.....	7.9	Chinese and Japanese.....	99.3	English.....	0.6	Chinese.....	0.6	Chinese.....	0.6	Chinese.....	99.3	English.....	0.6	Chinese.....	0.6	Chinese.....	0.6	27
27	Japanese.....	22,340	Japan.....	81.3	Canada.....	46.0	United States.....	0.1	Confucian, etc.....	0.1	Confucian, etc.....	53.1	Not stated.....	17.5	United Church.....	10.0	No religion.....	7.9	Chinese and Japanese.....	99.3	English.....	0.6	Chinese.....	0.6	Chinese.....	0.6	Chinese.....	99.3	English.....	0.6	Chinese.....	0.6	Chinese.....	0.6	28
28	Hindu.....	1,400	India.....	80.0	Canada.....	16.4	Other British Possessions.....	0.8	Hungary.....	0.8	Hungary.....	0.8	Other British Possessions.....	0.8	Other British Possessions.....	0.8	Other British Possessions.....	0.8	Various.....	93.1	English.....	5.3	Malay.....	1.0	French.....	0.2	Hindu.....	90.0	English.....	2.3	Scottish.....	2.3	Ukrainian.....	2.3	29
29	Syrian.....	10,753	Canada.....	59.4	Syria.....	35.7	United States.....	1.3	Other Arab.....	1.3	Roman Catholic.....	62.1	Anglican.....	26.3	United Church.....	13.2	Small sects.....	4.7	Syrian.....	79.4	English.....	15.9	French.....	3.8	Various ^b	0.3	Syrian.....	79.4	English.....	15.9	French.....	3.8	Various ^b	0.3	30
30	Indian.....	122,911	Canada.....	99.3	United States.....	0.7	West Indies.....	7.0	Other British Possessions.....	0.6	Roman Catholic.....	62.1	Anglican.....	26.3	United Church.....	13.2	Small sects.....	4.7	Various ^b	92.4	English.....	6.4	French.....	1.1	Various ^b	0.1	Indian.....	94.6	French.....	3.1	English.....	1.1	Scottish.....	1.1	31
31	Negro.....	15,426	Canada.....	79.6	United States.....	11.4	West Indies.....	7.0	Other British Possessions.....	0.6	Baptist.....	41.2	United Church.....	21.9	Anglican.....	17.9	Small sects.....	7.8	English.....	99.9	French.....	0.7	Various ^b	0.7	Spanish.....	0.1	Negro.....	90.0	English.....	3.2	French.....	1.6	Irish.....	1.2	32

^a "Austrian, n.o.s." mother tongue included with German in all cases.¹ Not stated.² Includes Mass, Welsh, Indian, Japanese, etc.³ From racial origin of parents of 1929-31 average of live births.

TABLE 5. Number of various racial origins and percentage increase by decades, Canada, 1901-1931

Racial Origin	No.				P.C. Increase		
	1901	1911	1921	1931	1901-1911	1911-1921	1921-1931
ALL RACES	5,371,315	7,206,643	8,787,949	10,376,786	34.17	21.94	18.08
British	3,063,195	3,896,985	4,668,738	5,381,671	27.22	24.94	10.62
English.....	1,280,890	1,823,150	2,546,358	2,741,419	44.59	39.61	7.70
Irish.....	988,721	1,050,384	1,107,803	1,230,808	6.24	5.47	11.10
Scottish.....	800,154	997,880	1,173,625	1,346,350	24.71	17.61	14.72
Other.....	13,421	25,571	41,962	62,494	90.53	64.06	48.97
French.....	1,049,371	2,054,890	2,452,743	2,927,990	24.69	19.36	19.38
Other European	457,950	923,727	1,247,103	1,825,252	101.71	35.01	46.36
Austrian, n.o.s. ¹	10,947 ²	42,535	107,671	48,639	288.55	153.14	-54.83
Belgian.....	2,994	9,593	20,234	27,885	220.41	110.92	36.33
Bulgarian.....	-	-	1,765	3,160	-	-	79.04
Czech and Slovak.....	-	-	8,840	30,401	-	-	243.90
Dutch.....	33,845	64,985	117,505	148,992	62.46	113.70	26.77
Finnish.....	2,502	15,497	21,494	43,885	519.38	38.70	104.17
German.....	310,501	393,320	294,635	473,544	25.67	-25.09	60.72
Greek.....	291	3,594	5,740	9,444	1,135.06	59.71	64.53
Hebrew.....	10,131	75,681	126,196	156,726	369.16	66.75	24.19
Hungarian.....	1,549 ³	11,605 ⁴	13,181	40,882	849.19	13.58	207.88
Italian.....	10,834	45,411	66,769	98,173	319.16	47.03	47.03
Lithuanian.....	-	-	1,870	5,876	-	-	198.27
Polish.....	6,285	33,365	53,405	145,509	430.87	60.00	172.46
Rumanian.....	354 ⁴	6,875 ⁴	13,470	29,056	1,559.60	129.28	115.71
Russian.....	19,825	43,142	100,064	88,148	117.61	131.94	-11.91
Scandinavian.....	31,042	107,535	167,359	228,049	246.42	55.63	36.26
Danish.....	-	-	21,124	34,118	-	-	61.51
Icelandic.....	-	-	15,876	19,382	-	-	22.08
Norwegian.....	-	-	68,856	93,243	-	-	35.42
Swedish.....	-	-	61,503	81,305	-	-	32.20
Ukrainian.....	5,682	74,963	108,721	225,113	1,219.31	42.30	110.94
Yugoslavic.....	-	-	3,806	16,174	-	-	314.08
Other.....	5,174 ⁴	6,625 ⁴	16,180 ⁴	6,232	28.04	144.23	-61.48
Asiatic	23,731	45,017	65,014	84,548	81.27	53.23	28.27
Chinese.....	17,312	27,774	39,587	46,519	60.43	42.43	17.51
Hindu.....	-	2,342	1,016	1,400	-	-56.62	37.80
Japanese.....	4,738	9,021	15,868	23,342	90.40	75.90	47.10
Syrian.....	1,437	-	8,282	10,753	-	-	29.84
Other.....	244	3,880	1,161	2,534	1,490.10	-70.08	118.26
Eskimo	7	7	3,200	5,979	-	-	82.90
Indian	127,941	105,492	110,455	122,911	-17.65	4.70	11.28
Negro	17,437	16,877	18,291	19,459	-3.21	5.38	6.37
Various	145	18,310	187	681	12,527.69	-98.99	284.17
Unspecified	31,639	147,345	21,249	8,899	367.18	-85.68	-58.13

n.o.s.—not otherwise specified.

¹ Includes Bohemian, Bukovinian and Slavic.² Includes Lithuanian and Moravian.³ Includes Bulgarian.⁴ Includes Cuban, Laplander, Lettish, Maltese, Portuguese, Serbian, Spanish and Swiss.⁵ Included with Other Asiatic.⁶ Includes Arabian, Armenian, Korean, Malayns, Persian, Phoenician, Siamese and Turkish.⁷ Included with Indian.⁸ Includes Argentinian, Bermudian, Brazilian, Chilian, Creole, East Indian, Egyptian, Haitian, Jamaican, Maoric, Mexican, Moorish, Philippine, Zulu, Peruvian, Algerian and Hawaiian.

TABLE 6. Canadian-, United States- and elsewhere-born population, by racial origin, Canada, 1931

Racial Origin	(1) Total Population	(2) Canadian Born	(3) United States Born	(4) Elsewhere Born
ALL RACES.....	10,376,786	8,069,261	344,574	1,962,951
British.....	5,381,071	4,033,007	174,416	1,173,648
English.....	2,741,419	1,920,259	85,894	735,266
Irish.....	1,230,808	1,053,449	47,195	130,164
Scottish.....	1,346,350	1,022,915	37,652	285,783
Other.....	62,494	36,384	3,675	22,436
French.....	2,927,990	2,850,576	55,630	21,784
Austrian, n.o.s.....	48,639	26,119	1,127	21,393
Belgian.....	27,585	11,194	676	15,716
Bulgarian.....	3,160	1,058	17	2,085
Chinese.....	46,519	5,399	23	41,100
Czech and Slovak.....	30,401	8,437	1,231	20,733
Danish.....	34,118	12,776	3,880	17,462
Dutch.....	148,902	119,009	9,731	20,225
Eskimo.....	5,979	5,899	68	12
Finnish.....	43,885	12,863	1,492	30,030
German.....	473,544	328,945	44,998	99,601
Greek.....	9,444	4,059	176	5,209
Hebrew.....	156,726	68,703	4,346	83,677
Hungarian.....	40,582	11,298	642	28,642
Icelandic.....	19,382	12,684	1,011	5,687
Indian.....	122,911	122,054	848	9
Italian.....	98,173	52,136	2,084	43,953
Japanese.....	23,342	11,311	28	12,003
Lithuanian.....	5,876	1,068	91	4,117
Negro.....	19,466	15,487	2,211	1,768
Norwegian.....	93,243	39,241	21,451	32,551
Polish.....	145,503	68,459	1,825	75,219
Romanian.....	29,056	14,739	302	14,016
Russian.....	88,148	47,618	3,065	37,465
Swedish.....	81,309	34,632	10,750	35,924
Syrian.....	10,753	6,333	219	4,154
Ukrainian ¹	225,113	128,281	712	96,120
Yugoslavic.....	16,174	3,236	240	12,698
Unspecified.....	8,898	7,837	800	261
Various ²	10,847	4,659	487	6,701

n.o.s.—not otherwise specified.

¹ Includes Bukovinian, Galician, Ruthenian and Ukrainian.² Includes "Other European", "Other Asiatic" and "Various".

TABLE 7. Canadian-, United States- and elsewhere-born population of the principal European racial origins (French and British excepted), by geographical grouping of origins, Canada, 1931

Racial Origin	(1) Total Population	(2) Canadian Born	(3) United States Born	(4) Elsewhere Born
North Western European.....	878,140	558,478	92,497	227,165
Belgian.....	27,585	11,194	676	15,716
Danish.....	34,118	12,776	3,880	17,462
Dutch.....	148,902	119,009	9,731	20,225
German.....	473,544	328,945	44,998	99,601
Icelandic.....	19,382	12,684	1,011	5,687
Norwegian.....	93,243	39,241	21,451	32,551
Swedish.....	81,309	34,632	10,750	35,924
Percentage of total.....	100-00	63-60	10-53	26-87
South, Eastern and Central European.....	784,154	379,471	13,004	391,679
Austrian, n.o.s.....	48,639	26,119	1,127	21,393
Bulgarian.....	3,160	1,058	17	2,085
Czech and Slovak.....	30,401	8,437	1,231	20,733
Finnish.....	43,885	12,863	1,492	30,030
Greek.....	9,444	4,059	176	5,209
Hungarian.....	40,582	11,298	642	28,642
Italian.....	98,173	52,136	2,084	43,953
Lithuanian.....	5,876	1,068	91	4,117
Polish.....	145,503	68,459	1,825	75,219
Romanian.....	29,056	14,739	302	14,016
Russian.....	88,148	47,618	3,065	37,465
Ukrainian ¹	225,113	128,281	712	96,120
Yugoslavic.....	16,174	3,236	240	12,698
Percentage of total.....	100-00	48-39	1-66	49-95

n.o.s.—not otherwise specified.

¹ Includes Bukovinian, Galician, Ruthenian and Ukrainian.

TABLE 8. Canadian-, United States- and elsewhere-born population of the principal European racial origins (French and British excepted), by linguistic grouping of origins, Canada, 1931

Racial Origin	(1) Total Population	(2) Canadian Born	(3) United States Born	(4) Elsewhere Born
Scandinavian.....	228,049	99,333	37,092	91,624
Danish.....	34,118	12,776	3,880	17,462
Icelandic.....	19,382	12,684	1,011	5,687
Norwegian.....	93,243	39,241	21,451	32,551
Swedish.....	81,306	34,632	10,750	35,924
Percentage of total.....	100-00	43-56	16-20	40-18
Germanic.....	650,091	459,145	55,406	135,541
Dutch.....	148,962	119,000	9,731	20,225
Belgian.....	27,583	11,194	670	15,715
German.....	473,544	328,945	44,998	99,601
Percentage of total.....	100-00	70-63	8-52	20-85
Latin and Greek.....	136,673	70,934	2,562	63,177
Greek.....	9,444	4,059	170	5,209
Italian.....	98,173	52,136	2,084	43,953
Rumanian.....	29,055	14,739	302	14,015
Percentage of total.....	100-00	51-90	1-87	46-22
Slavic.....	563,014	284,870	8,308	269,836
Austrian, n.o.s. ¹	48,639	26,119	1,127	21,393
Bulgarian.....	3,160	1,058	17	2,085
Czech and Slovak.....	30,401	8,437	1,231	20,733
Lithuanian.....	5,876	1,668	91	4,117
Polish.....	145,503	68,459	1,825	75,219
Russian.....	88,146	47,618	3,065	37,465
Ukrainian ¹	225,113	128,281	712	96,120
Yugoslavic.....	16,174	3,230	240	12,698
Percentage of total.....	100-00	50-60	1-48	47-93

n.o.s.—not otherwise specified.

¹ Includes Bukovinian, Galician, Ruthenian and Ukrainian.

TABLE 9. Percentages of population Canadian-, United States- and elsewhere-born, by racial origin, Canada, 1921 and 1931

Racial Origin	1921 Percentage			1931 Percentage		
	Canadian-Born	United States-Born	Elsewhere-Born	Canadian-Born	United States-Born	Elsewhere-Born
ALL RACES	77.76	4.25	18.00	77.76	3.32	18.92
British	74.12	4.21	21.67	74.95	3.24	21.81
English.....	68.34	4.24	27.42	70.05	3.13	26.82
Irish.....	85.48	4.66	9.86	85.59	3.83	10.58
Scottish.....	70.58	3.57	19.85	75.98	2.80	21.23
Other.....	56.29	8.56	35.15	58.22	5.88	35.90
French.....	97.02	2.06	0.92	97.36	1.90	0.74
Armenian.....	26.92	1.50	71.58	"	"	"
Austrian, n.o.s.....	52.12	1.30	46.58	53.70	2.32	43.98
Belgian.....	33.41	3.63	62.96	40.58	2.45	56.97
Bulgarian.....	14.96	0.62	84.42	33.48	0.54	65.98
Chinese.....	7.49	0.09	92.42	11.60	0.05	88.35
Czech and Slovak.....	44.00	11.81	44.19	27.75	4.05	68.20
Danish.....	42.18	19.51	38.51	37.45	11.37	51.18
Dutch.....	82.77	8.69	8.57	79.89	6.53	13.58
Eskimo.....	99.94	-	0.06	98.66	1.14	0.20
* Finnish.....	36.90	6.64	56.40	28.17	3.40	68.43
German.....	71.74	13.58	14.68	69.46	9.50	21.03
Greek.....	30.84	2.13	67.23	42.98	1.86	55.16
Hebrew.....	40.33	3.84	55.83	43.84	2.77	53.39
Hungarian.....	50.01	4.36	45.63	27.84	1.68	70.58
Icelandic.....	55.00	6.35	38.50	65.44	5.22	29.34
Indian.....	99.11	0.60	0.29	99.30	0.69	0.01
Italian.....	43.03	2.86	54.11	53.11	2.12	44.77
Japanese.....	27.31	0.10	72.59	48.46	0.12	51.42
Lettish.....	39.37	1.57	59.06	"	"	"
Lithuanian.....	41.63	2.23	56.14	28.39	1.55	70.06
Negro.....	74.82	16.94	8.24	79.60	11.36	9.04
Norwegian.....	34.23	32.22	33.55	42.08	23.01	34.91
Polish.....	51.78	2.82	45.40	47.06	1.25	51.70
Portuguese.....	72.81	7.28	19.91	"	"	"
Roumanian.....	44.75	1.07	54.18	50.73	1.04	48.23
Russian.....	49.69	6.15	44.20	54.02	3.48	42.50
Spanish.....	44.84	13.99	41.17	"	"	"
Swedish.....	35.33	18.90	45.77	42.50	13.22	44.18
Swiss.....	61.87	13.16	24.97	"	"	"
Syrian.....	49.77	3.05	47.18	59.36	2.01	38.63
Turkish.....	41.85	2.24	55.91	"	"	"
Ukrainian ¹	54.15	0.28	45.57	56.99	0.32	42.70
Yugoslavic.....	36.33	5.99	67.68	20.01	1.48	78.51
Unspecified.....	86.04	11.63	2.33	88.08	8.99	2.93
Various ²	15.07	1.37	83.56	42.96	4.49	52.56

n.o.s.—not otherwise specified. ¹Includes Bukovinian, Galician, Rutherian and Ukrainian. ²Includes "Other European," "Other Asiatic" and "Various." ³Separate data not available for specified racial origins in 1931

TABLE 10. Percentages and rank of population (1) Canadian-born and (2) elsewhere-born (other than in the U.S.A.), by racial origin, Canada, 1931

Racial Origin	P.C. Canadian-Born	Rank (1)	Racial Origin	P.C. Elsewhere-Born (other than in the U.S.A.)	Rank (2)
Indian.....	99.30	1	Chinese.....	88.35	1
Eskimo.....	98.66	2	Yugoslavia.....	78.51	2
French.....	97.39	3	Hungarian.....	70.58	3
Unspecified.....	88.08	4	Lithuanian.....	70.06	4
Irish.....	85.59	5	Finnish.....	68.43	5
Dutch.....	79.89	6	Czech and Slovak.....	68.20	6
Negro.....	79.69	7	Bulgarian.....	66.98	7
Scottish.....	75.98	8	Belgian.....	66.97	8
English.....	70.05	9	Greek.....	65.19	9
German.....	69.46	10	Hebrew.....	53.39	10
Icelandic.....	65.44	11	Various.....	52.58	11
Syrian.....	59.30	12	Polish.....	51.79	12
Other British.....	58.22	13	Japanese.....	51.42	13
Ukrainian.....	56.99	14	Danish.....	51.18	14
Russian.....	54.02	15	Romanian.....	48.23	15
Austrian, n.o.s.....	53.70	16	Italian.....	44.77	16
Italian.....	53.11	17	Swedish.....	44.18	17
Romanian.....	50.73	18	Austrian, n.o.s.....	43.98	18
Japanese.....	48.40	19	Ukrainian.....	42.50	19
Polish.....	47.06	20	Russian.....	42.50	20
Hebrew.....	43.84	21	Syrian.....	38.63	21
Greek.....	42.08	22	Other British.....	35.90	22
Various.....	42.05	23	Norwegian.....	34.91	23
Swedish.....	42.09	24	Icelandic.....	29.34	24
Norwegian.....	42.08	25	English.....	26.82	25
Belgian.....	40.58	26	Scottish.....	21.23	26
Danish.....	37.45	27	German.....	21.03	27
Bulgarian.....	33.48	28	Dutch.....	13.58	28
Lithuanian.....	28.50	29	Irish.....	10.58	29
Finnish.....	28.17	30	Negro.....	9.04	30
Hungarian.....	27.84	31	Unspecified.....	2.93	31
Czech and Slovak.....	27.75	32	French.....	0.74	32
Yugoslavia.....	20.01	33	Eskimo.....	0.20	33
Chinese.....	11.60	34	Indian.....	0.01	34

n.o.s.—not otherwise specified.

* Includes Bukovinian, Galician, Ruthenian and Ukrainian.

† Includes "Other European," "Other Asiatic" and "Various."

TABLE 11. Percentages of population Canadian-, United States- and elsewhere-born, of the principal European racial origins (French and British excepted), by geographical grouping of origins, Canada, 1921 and 1931

Racial Origin	P.C. Canadian-Born		P.C. United States-Born		P.C. Elsewhere-Born	
	1921	1931	1921	1931	1921	1931
North Western European.....	63.09	63.60	14.98	10.53	21.93	25.87
Belgian.....	33.41	40.68	3.63	2.45	62.96	56.97
Danish.....	42.18	37.45	19.51	11.37	38.31	51.18
Dutch.....	82.77	79.89	8.66	6.33	8.57	13.58
German.....	71.74	69.46	13.68	9.54	14.68	21.03
Icelandic.....	55.06	65.44	6.38	5.22	38.69	29.34
Norwegian.....	34.23	42.08	32.22	23.01	33.65	34.91
Swedish.....	35.23	42.09	18.90	13.22	45.77	44.18
South, Eastern and Central European.....	49.24	48.39	2.85	1.66	47.81	49.95
Austrian, n.o.s.....	52.11	53.70	1.30	2.32	40.68	43.98
Bulgarian.....	14.86	33.48	0.62	0.54	84.42	65.98
Czech and Slovak.....	40.09	27.75	11.81	4.95	44.19	68.20
Finnish.....	30.99	28.17	6.54	3.40	50.40	68.43
Greek.....	30.84	42.98	2.13	1.89	67.23	55.16
Hungarian.....	50.01	27.84	4.36	1.58	45.63	70.58
Italian.....	43.03	53.11	2.88	2.12	54.11	44.77
Lithuanian.....	41.62	28.38	2.23	1.55	56.14	70.06
Polish.....	51.79	47.05	2.82	1.25	45.40	51.70
Romanian.....	44.70	50.73	1.07	1.04	54.18	48.23
Russian.....	40.05	64.02	6.15	3.48	44.20	43.50
Ukrainian.....	54.15	56.99	0.28	0.32	45.57	42.70
Yugoslavia.....	30.33	20.01	5.99	1.43	67.68	78.51

n.o.s.—not otherwise specified.

* Includes Bukovinian, Galician, Ruthenian and Ukrainian.

TABLE 12. Percentages of population Canadian-, United States- and elsewhere-born, of the principal European racial origins (French and British excepted), by linguistic grouping of origins, Canada, 1931

Racial Origin	(1) P.C. Canadian- Born	(2) P.C. United States- Born	(3) P.C. Elsewhere- Born
Scandinavian.....	43-56	16-26	40-18
Danish.....	37-45	11-37	51-18
Icelandic.....	65-44	5-22	29-34
Norwegian.....	42-08	23-01	34-91
Swedish.....	42-59	13-22	44-18
Germanic.....	70-63	8-52	20-85
Dutch.....	79-89	6-53	13-58
Belgian.....	40-58	2-45	66-97
German.....	69-46	9-50	21-03
Latin and Greek.....	51-90	1-87	46-22
Greek.....	42-98	1-86	55-16
Italian.....	53-11	2-12	44-17
Roumanian.....	50-73	1-04	48-23
Slavic.....	50-60	1-48	47-93
Austrian, n.o.s.....	53-70	2-32	43-98
Bulgarian.....	33-48	0-54	65-98
Czech and Slovak.....	27-75	4-05	68-20
Lithuanian.....	28-39	1-55	70-06
Polish.....	47-05	1-25	51-70
Russian.....	54-02	3-48	42-50
Ukrainian ¹	56-99	0-33	42-70
Yugoslavian.....	20-01	1-48	78-51

n.o.s.—not otherwise specified.

¹ Includes Bukovinian, Galician, Ruthenian and Ukrainians.**TABLE 13. Continental European born and percentage increase per decade, by geographical grouping of countries of birth, Canada, 1901-1931**

Birthplace	No.				P.C. Increase		
	1901	1911	1921	1931	1901-1911	1911-1921	1921-1931
Total population.....	5,371,315	7,206,643	8,787,949	10,376,796	34-17	21-94	18-08
North Western Europe.....	56,297	130,219	128,411	173,730	131-31	- 1-39	35-29
Belgium.....	2,280	7,975	13,270	17,033	249-78	66-47	28-30
Denmark.....	2,075	4,937	7,192	17,217	137-93	45-68	139-39
France.....	7,944	17,619	19,247	16,756	121-79	9-24	-12-94
Germany.....	27,300	39,577	25,268	39,163	44-97	-28-16	55-00
Holland.....	385	3,808	5,827	10,736	889-09	53-02	84-25
Iceland.....	5,057	7,109	6,776	5,731	17-37	-4-68	-15-42
Norway.....	10,256	20,968	23,127	32,679	379-66	10-30	41-30
Sweden.....	10,256	28,226	27,700	34,415	-	- 1-86	24-24
South, Eastern and Central Europe.....	67,771	269,437	310,946	494,624	232-57	15-41	59-07
Austria.....	28,407	67,502	57,535	37,391	-	-14-77	-35-01
Bulgaria.....	1,066	1,866	1,065	1,467	-	-39-68	45-87
Czechoslovakia.....	-	1,689	4,329	22,535	-	155-89	423-34
Finland.....	-	10,987	12,156	30,354	-	10-64	149-70
Greece.....	213	2,640	3,769	5,679	1,139-44	42-77	48-02
Hungary.....	1	10,556	7,493	28,523	-	-29-22	280-66
Italy.....	6,854	34,739	35,531	42,578	406-84	2-28	19-83
Poland.....	1	31,373	65,304	171,169	-	108-15	162-11
Roumania.....	4	18,271	22,779	40,322	-	24-67	77-01
Russia.....	31,231	89,984	101,065	114,406	-	-	13-21
Total.....	-	225,388 ^a	-	-	-	-	-
Yugoslavia.....	-	-	1,946	17,110	-	-	780-00
Total including Yugoslavia.....	-	-	312,895	511,734	-	-	63-60

¹ Included with Austria.² Included with Sweden.³ Included with Russia.⁴ Included with Bulgaria.^a Includes only Austria, Bulgaria, Greece, Hungary, Italy, Poland, Roumania and Russia same as 1901 total.

TABLE 14. Continental European born and percentage increase per decade, by linguistic grouping of countries of birth, Canada, 1901-1931

Country of Birth	No.				P.C. Increase		
	1901	1911	1921	1931	1901-1911	1911-1921	1921-1931
Total population.....	5,371,315	7,206,643	8,787,949	10,376,780	34.17	21.94	18.08
Scandinavian.....	18,388	61,240	64,785	90,042	233.04	5.81	38.96
Denmark.....	2,075	4,537	7,192	17,217	137.93	45.68	139.39
Iceland.....	6,087	7,109	6,776	5,731	17.37	-4.68	-15.42
Norway.....	1	20,958	23,127	32,679	1	10.30	41.30
Sweden.....	10,256	28,226	27,700	34,415	379.66	-1.86	24.24
Germanic.....	29,965	51,360	44,369	66,932	71.40	-13.61	50.85
Belgium.....	2,280	7,975	13,276	17,033	249.78	66.47	28.30
Germany.....	27,300	39,577	25,266	39,163	44.97	-36.16	65.00
Holland.....	385	3,808	5,827	10,740	839.09	53.02	84.26
Latin and Greek ¹	15,011	54,998	58,547	64,913	265.38	6.45	10.87
France.....	7,944	17,619	19,247	16,756	121.79	9.24	-12.94
Greece.....	213	2,640	3,769	5,579	1,139.44	42.77	48.02
Italy.....	6,854	34,739	35,531	42,578	406.84	2.28	19.83

¹ Included with Sweden.² Roumania omitted because complete figures not available.

TABLE 15. Length of residence in Canada of the average (median) Continental European immigrant, by geographical and linguistic grouping of countries of birth, Canada, 1931

Country of Birth	Length of Residence of Median Immigrant	Country of Birth	Length of Residence of Median Immigrant
	years		years
North Western Europe—		Scandinavia—	
Belgium.....	14-01	Denmark.....	5-28
Denmark.....	5-28	Iceland ¹	31-51
France.....	21-80	Norway.....	16-34
Germany.....	18-47	Sweden.....	18-54
Holland.....	8-31	Germanic—	
Iceland.....	31-51	Belgium.....	14-01
Norway.....	16-34	Germany.....	10-38
Sweden.....	18-57	Holland.....	8-31
Switzerland.....	9-36	Latin and Greek—	
South, Eastern and Central Europe—		France.....	21-80
Austria.....	19-50	Greece.....	16-07
Bulgaria.....	15-94	Italy.....	16-84
Czechoslovakia.....	3-90	Roumania.....	18-54
Finland.....	6-78	Spain.....	16-66
Greece.....	16-07	Slavic—	
Hungary.....	3-98	Austria.....	19-50
Lithuania.....	4-74	Bulgaria.....	15-84
Poland ¹	14-57	Czechoslovakia.....	3-90
Roumania.....	18-54	Lithuania.....	4-74
Russia.....	17-45	Poland.....	14-54
Spain.....	16-66	Russia.....	17-45
Ukraine.....	16-03	Ukraine.....	16-03
Yugoslavia.....	3-95	Yugoslavia.....	3-95

¹ Median prior to 1901; 31-51 estimate on assumption that those coming prior to 1901 came during the previous decade.² Includes Galicia.

TABLE 16. Population, by racial origin and sex, with percentage of males to females for each origin, Canada, 1931

Racial Origin	Population		Males as P.C. of Females
	Males	Females	
ALL RACES	5,374,541	5,002,245	107
British	2,753,665	2,627,406	105
English.....	1,398,513	1,342,904	104
Irish.....	630,495	600,313	105
Scottish.....	690,138	656,212	105
Other.....	34,519	27,976	123
French ¹	1,473,375	1,454,615	101
Austrian, B.O.S.....	27,070	21,569	126
Belgian.....	14,991	12,594	119
Bulgarian.....	2,151	1,009	213
Chinese.....	43,051	3,468	1,241
Czech and Slovak.....	20,093	10,308	195
Danish.....	20,791	13,327	156
Dutch.....	77,909	71,053	110
Finnish.....	25,257	18,628	136
German.....	247,844	225,704	110
Greek.....	6,055	3,389	179
Hebrew.....	79,067	77,639	102
Hungarian.....	25,066	15,516	162
Icelandic.....	9,872	9,510	104
Indian.....	62,943	59,068	105
Italian.....	55,141	43,032	128
Japanese.....	13,800	9,539	145
Negro.....	10,186	9,270	110
Norwegian.....	53,637	39,706	136
Polish.....	82,088	63,415	129
Roumanian.....	16,781	12,275	137
Russian.....	48,130	40,018	120
Swedish.....	48,049	33,257	144
Syrian.....	5,787	4,060	117
Ukrainian.....	122,772	102,341	120
Yugoslavian.....	11,732	4,442	264
Unspecified.....	4,176	4,722	88
Various ²	13,130	9,563	137

n.o.s.—not otherwise specified.

¹ The figures for the French in Canada exclusive of Quebec in 1931 are as follows:—

M.=338,628. F.=315,538. Male to female 106 p.c. or 6 p.c. surplus males.

² Includes "Other European," "Other Asiatic" and "Various."

TABLE 17. Immigrant population, by racial origin and sex, with percentage of males to females for each origin, Canada, 1931

Racial Origin	Immigrants		Males as P.C. of Females
	Males	Females	
ALL RACES	1,298,540	1,008,985	129
British	713,347	634,717	112
English.....	434,245	386,915	112
Irish.....	94,576	82,783	114
Scottish.....	169,069	154,366	110
Other.....	15,457	10,653	145
French.....	38,300	39,105	98
Austrian, B.O.S.....	14,003	8,517	164
Belgian.....	9,336	7,055	132
Bulgarian.....	1,649	453	364

n.o.s.—not otherwise specified.

TABLE 17. Immigrant population, by racial origin and sex, with percentage of males to females for each origin, Canada, 1931—Con.

Racial Origin	Immigrants		Males as P.C. of Females
	Males	Females	
Chinese.....	40,096	1,028	3,900
Czech and Slovak.....	16,792	6,172	256
Danish.....	14,337	7,045	203
Dutch.....	16,886	13,079	129
Finnish.....	19,018	12,508	152
German.....	81,421	63,178	129
Greek.....	3,953	1,432	276
Hebrew.....	44,457	43,566	102
Hungarian.....	19,297	9,987	193
Icelandic.....	3,449	3,349	106
Indian.....	441	416	106
Italian.....	29,098	16,930	172
Japanese.....	7,795	4,236	184
Negro.....	2,298	1,671	138
Norwegian.....	33,627	20,375	165
Polish.....	47,800	29,244	163
Roumanian.....	9,337	4,989	187
Russian.....	24,192	16,338	148
Swedish.....	30,639	16,095	191
Syrian.....	2,509	1,851	135
Ukrainian.....	58,148	38,084	150
Yugoslavian.....	10,081	2,857	353
Unspecified.....	484	577	84
Various ¹	6,884	3,592	192

¹ Includes "Other European," "Other Asiatic" and "Various."**TABLE 18. Adult population (21 years of age and over), by racial origin, with percentage of males to females for each origin, Canada, 1931**

Racial Origin	Adult Population		Males as P.C. of Females
	Males	Females	
ALL RACES.....	3,695,916	2,770,675	112
British.....	1,683,451	1,680,322	105
English.....	847,231	815,318	104
Irish.....	388,106	367,091	106
Scottish.....	426,578	402,255	106
Other.....	21,536	15,648	138
French.....	733,980	712,659	103
Austrian.....	15,374	9,860	156
Belgian.....	9,134	6,929	132
Bulgarian.....	1,535	396	398
Chinese.....	40,120	1,264	3,174
Czech and Slovak.....	15,048	5,422	278
Danish.....	14,148	6,958	203
Dutch.....	44,056	38,429	115
Finnish.....	18,630	11,879	157
German.....	140,168	119,455	117
Greek.....	3,824	1,331	287
Hebrew.....	45,679	44,069	104
Hungarian.....	17,303	7,914	219
Icelandic.....	5,777	5,641	102
Indian.....	30,290	27,693	109
Italian.....	29,485	17,701	167
Japanese.....	8,035	4,304	187
Negro.....	8,012	4,913	122
Norwegian.....	33,154	20,025	166
Polish.....	48,417	29,255	165
Roumanian.....	9,254	4,930	188
Russian.....	25,489	17,458	146
Swedish.....	32,130	17,491	184
Syrian.....	2,902	2,169	134
Ukrainian.....	63,250	42,524	149
Yugoslavian.....	9,377	2,203	426
Unspecified.....	1,728	2,465	70
Various ¹	8,149	4,974	164

¹ Includes Lithuanian, "Other European", "Other Asiatic", Eskimo and "Other races".

TABLE 19. Immigrants and percentage surplus of males, by birthplace and sex, Canada, 1931

Birthplace	Immigrants		P.C. Surplus of Males
	Males	Females	
TOTAL IMMIGRANTS	1,238,540	1,068,985	29
<i>British born</i>	<i>691,411</i>	<i>555,419</i>	<i>14</i>
British Isles	607,629	531,413	14
England.....	386,738	337,126	15
Ireland.....	58,916	48,028	21
Scotland.....	145,540	134,225	8
Wales.....	13,117	9,231	42
Lesser Isles.....	3,218	2,203	46
Country not stated.....	-	-	-
British Possessions	23,451	21,706	8
Australia.....	1,972	1,593	24
India.....	2,909	1,703	74
Newfoundland.....	12,780	13,624	-6
New Zealand.....	618	516	33
South Africa.....	1,168	1,067	9
West Indies.....	2,450	2,087	17
Other.....	1,288	1,016	27
<i>Foreign born</i>	<i>607,189</i>	<i>455,869</i>	<i>46</i>
Europe	438,183	276,279	60
Austria.....	22,260	15,122	47
Belgium.....	9,706	7,327	32
Bulgaria.....	1,191	276	332
Czechoslovakia.....	10,702	6,133	172
Denmark.....	12,183	5,034	142
Finland.....	18,472	11,882	55
France.....	8,924	7,832	14
Germany.....	25,743	18,420	54
Greece.....	4,184	1,425	192
Holland.....	6,944	3,892	76
Hungary.....	18,700	9,817	91
Iceland.....	2,845	2,886	-1
Italy.....	27,309	15,209	79
Norway.....	22,065	10,024	108
Poland.....	101,482	69,577	46
Rumania.....	24,453	15,889	54
Russia.....	62,240	52,157	19
Sweden.....	23,900	10,509	127
Switzerland.....	4,100	1,970	108
Ukraine.....	8,472	5,287	60
Yugoslavia.....	12,674	4,436	180
Other.....	5,748	3,415	68
Asia	52,175	8,433	519
China.....	40,575	1,462	2,675
Japan.....	7,909	4,352	82
Syria.....	2,305	1,648	40
Turkey.....	542	379	43
Other.....	844	593	43
United States	175,140	169,424	3
Other countries	1,631	1,420	15
At sea	431	300	44

¹ Includes Galicia.

TABLE 20. Adult immigrant population (21 years of age and over) and percentage surplus of males, by birthplace and sex, Canada, 1931

Birthplace	Adult Immigrants		P.C. Surplus of Males
	Males	Females	
TOTAL ADULT IMMIGRANTS	1,152,748	876,261	32
<i>British born</i>	<i>594,484</i>	<i>499,690</i>	<i>14</i>
British Isles	543,723	478,004	12
England.....	348,404	306,809	14
Ireland.....	53,091	43,219	23
Scotland.....	128,187	118,319	8
Wales.....	11,056	7,600	45
Lesser Isles.....	3,017	2,067	47
Country not stated.....	-	-	-
British Possessions	29,375	18,435	11
Australia.....	1,706	1,349	26
India.....	2,001	1,473	77
Newfoundland.....	10,985	11,478	-4
New Zealand.....	728	524	39
South Africa.....	1,003	936	7
West Indies.....	2,266	1,868	21
Other.....	1,088	807	35
<i>Foreign born</i>	<i>558,264</i>	<i>379,571</i>	<i>55</i>
Europe	397,467	230,480	69
Austria.....	21,281	14,101	51
Belgium.....	8,581	6,288	37
Belgium.....	1,130	232	387
Czechoslovakia.....	15,187	4,707	233
Denmark.....	11,084	4,100	170
Finland.....	17,283	10,499	65
France.....	8,425	7,347	15
Germany.....	21,351	13,284	61
Greece.....	3,908	1,231	217
Holland.....	5,793	3,042	90
Hungary.....	19,127	7,259	122
Iceland.....	2,792	2,838	-2
Italy.....	24,851	13,327	86
Norway.....	20,753	9,506	118
Poland ¹	90,887	58,572	56
Romania.....	22,684	14,103	61
Russia.....	54,209	43,904	23
Sweden.....	22,918	9,670	137
Switzerland.....	3,869	1,765	119
Ukraine.....	7,709	4,483	72
Yugoslavia.....	11,411	3,326	243
Other.....	5,241	2,904	80
Asia	50,731	7,651	563
China.....	39,738	1,163	3,317
Japan.....	7,623	4,135	84
Syria.....	2,188	1,536	42
Turkey.....	487	322	51
Other.....	695	495	40
United States.....	138,821	134,356	3
Other countries.....	1,269	1,084	17
At sea.....	364	251	45

¹ Includes Galicia.

TABLE 21. Percentage distribution of male and female population, by quinquennial age groups and nativity, Canada, 1931

Nativity	Percentage in Age Group												
	All Ages	Under 15	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65 and over
MALES													
ALL CLASSES	100-00	30-88	9-78	8-63	7-63	6-85	6-68	6-47	5-99	4-98	3-71	2-92	5-48
Canadian born.....	100-00	38-80	11-64	8-84	6-49	5-47	5-16	4-70	4-29	3-83	3-08	2-53	5-18
British born.....	100-00	4-92	4-35	8-02	9-66	9-29	9-96	12-07	12-49	9-97	6-50	4-96	7-90
Foreign born.....	100-00	7-06	3-56	7-97	12-67	13-09	12-91	11-98	10-19	7-28	4-91	3-35	5-02
FEMALES													
ALL CLASSES	100-00	32-44	10-28	8-95	7-52	6-81	6-59	5-92	5-27	4-43	3-36	2-75	5-63
Canadian born.....	100-00	38-78	11-79	8-94	6-66	5-62	5-24	4-65	4-10	3-59	2-89	2-46	5-28
British born.....	100-00	5-41	3-62	7-74	9-74	11-00	11-59	11-84	11-14	9-10	5-02	4-58	8-33
Foreign born.....	100-00	9-74	5-17	10-51	12-45	12-14	12-30	10-31	8-47	6-05	4-30	3-14	5-43

¹ Stated ages only.

TABLE 22. Percentage distribution of the various stocks, by broad age groups, Canada, 1931

Racial Origin	Age Group		
	Under 10	10-20	21 and over
	p.c.	p.c.	p.c.
ALL RACES	21-27	22-19	56-54
English.....	18-28	21-07	60-65
Irish.....	18-22	20-43	61-36
Scottish.....	17-80	20-64	61-66
Other British.....	18-70	21-74	60-50
French.....	26-29	24-30	49-41
Austrian, n.o.s.....	23-01	25-11	51-88
Belgian.....	22-03	19-74	58-23
Belgarian.....	26-99	12-22	60-79
Chinese.....	5-78	5-28	88-99
Czech and Slovak.....	18-65	14-01	67-33
Danish.....	19-62	18-52	61-80
Dutch.....	22-51	22-12	55-37
Finnish.....	13-08	17-40	60-62
German.....	22-22	22-03	54-83
Greek.....	26-57	18-80	54-58
Hebrew.....	16-91	26-81	57-98
Hungarian.....	21-43	16-44	62-14
Icelandic.....	19-54	21-55	58-91
Italian.....	26-69	25-25	48-06
Japanese.....	29-11	18-03	52-86
Lithuanian.....	15-90	18-91	65-20
Negro.....	22-29	21-66	56-15
Norwegian.....	20-40	22-56	57-03
Polish.....	22-82	23-80	53-38
Romanian.....	26-73	24-42	48-85
Russian.....	26-37	24-91	48-72
Swedish.....	18-52	20-45	61-03
Syrian.....	25-83	27-02	47-16
Ukrainian.....	25-22	27-79	46-99
Yugoslavia.....	17-13	11-28	71-60
Unspecified.....	32-10	20-78	47-12
Various.....	24-19	20-59	55-22
Indian.....	28-97	23-85	47-17

n.o.s.—not otherwise specified.

TABLE 23. Percentage distribution of specified stocks, by broad age, linguistic and other groupings, Canada,¹ 1931

Racial Origin	Age Group		
	Under 10	10-20	21 and over
	p.c.	p.c.	p.c.
ALL RACES	21-27	22-19	56-54
British	18-15	20-82	61-62
English.....	18-28	21-07	60-65
Irish.....	18-22	20-43	61-36
Scottish.....	17-80	20-64	61-56
Other.....	18-76	21-74	59-50
French.....	26-29	24-30	49-41
Scandinavian.....	19-54	21-12	59-34
Danish.....	19-02	18-52	61-86
Icelandic.....	19-54	21-55	58-91
Norwegian.....	20-40	22-56	57-03
Swedish.....	18-62	20-45	61-03
Germanic.....	22-28	22-62	55-10
Belgian.....	22-03	19-74	58-23
Dutch.....	22-51	22-12	55-37
German.....	22-22	22-95	54-83
Latin and Greek.....	26-69	24-63	48-68
Greek.....	26-57	18-85	54-58
Italian.....	26-69	25-25	48-06
Rumanian.....	26-73	24-42	48-85
Slavic.....	23-91	24-68	51-41
Austrian.....	23-01	25-11	51-88
Bulgarian.....	26-99	12-22	60-79
Czech and Slovak.....	18-65	14-01	67-33
Lithuanian.....	15-90	18-91	65-20
Polish.....	22-82	23-80	53-38
Russian.....	26-37	24-91	48-72
Ukrainian.....	25-22	27-79	46-99
Yugoslavic.....	17-13	11-28	71-60
Asiatic	15-20	11-87	72-93
Chinese.....	5-76	5-28	88-96
Japanese.....	29-11	18-03	52-86
Syrian.....	25-83	27-03	47-16

¹ Includes Yukon and Northwest Territories (1921 figures for same table were exclusive of these).

TABLE 24. Percentage distribution of males and females 15 years of age and over, by racial origin and conjugal condition, Canada, 1931

Racial Origin	Males				Females			
	Single	Married	Widowed	Divorced	Single	Married	Widowed	Divorced
	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.
ALL RACES	40-93	54-74	4-01	0-11	34-01	57-35	8-54	0-10
British	39-65	56-01	4-19	0-14	32-37	57-75	9-75	0-13
English.....	37-88	58-00	3-96	0-15	30-28	60-44	9-14	0-14
Irish.....	41-96	53-18	4-73	0-12	35-09	53-94	10-86	0-10
Scottish.....	41-04	54-62	4-19	0-13	34-13	55-69	10-05	0-12
Other.....	40-80	55-42	3-59	0-19	32-91	59-23	7-68	0-18
French	43-39	51-98	4-61	0-02	39-67	53-08	7-22	0-02
Other European	43-12	54-00	2-72	0-14	31-16	62-59	6-13	0-13
Austrian; n.o.s.....	44-34	53-40	2-11	0-11	30-29	64-99	4-60	0-15
Belgian.....	38-40	58-57	2-94	0-07	24-82	70-25	4-85	0-08
Czech and Slovak.....	31-80	66-51	1-48	0-02	23-74	72-59	3-62	0-05
Dutch.....	37-60	57-87	4-30	0-16	29-84	60-40	9-57	0-12
Finnish.....	51-50	46-10	2-27	0-11	35-12	60-47	4-20	0-11
German.....	42-32	54-09	3-41	0-16	31-42	60-80	7-58	0-12
Hebrew.....	41-15	57-07	1-65	0-12	37-18	56-37	6-25	0-19
Hungarian.....	33-37	64-90	1-62	0-08	21-24	75-06	3-60	0-08
Italian.....	40-57	56-93	2-45	0-03	31-18	64-12	4-65	0-06
Polish.....	43-09	55-00	1-80	0-06	30-71	65-51	3-71	0-07
Roumanian.....	37-68	59-96	2-11	0-23	27-21	68-84	3-84	0-10
Russian.....	41-40	56-88	2-57	0-11	31-71	63-68	4-38	0-23
Scandinavian.....	54-44	42-04	3-20	0-24	31-19	62-38	6-20	0-22
Ukrainian.....	41-61	55-99	2-22	0-15	29-45	65-81	4-63	0-11
Other.....	41-76	56-32	1-75	0-10	26-46	69-09	4-35	0-11
Asiatic	22-65	62-94	1-22	0-07	25-21	69-06	5-33	0-08
Chinese and Japanese.....	20-35	64-10	0-90	0-06	19-91	76-24	3-28	0-07
Other.....	43-15	52-57	4-13	0-00	34-78	56-09	9-05	0-08
Indian and Eskimo	34-95	57-70	7-29	0-05	22-70	64-14	13-08	0-07
Unspecified and others	44-10	49-64	5-83	0-34	34-25	52-74	12-24	0-32

n.o.s.—not otherwise specified.

TABLE 25. Percentage distribution of single females 15 years of age and over, by racial origin and specified age groups, Canada, 1931

Racial Origin	Age Group						
	Total	15-19	20-24	25-34	35-44	45-64	65 and over
	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.
ALL RACES.....	34.01	94.90	63.13	25.85	12.50	10.62	10.86
British.....	32.37	95.38	65.34	27.34	13.20	11.60	11.90
English.....	30.28	94.80	62.00	24.03	11.00	9.33	9.29
Irish.....	35.00	95.90	69.22	32.38	16.86	14.75	14.28
Scottish.....	34.13	96.08	68.83	30.02	14.71	13.41	13.96
Other.....	32.91	96.12	65.10	24.04	10.41	9.17	9.11
French.....	39.67	95.74	66.80	30.12	15.65	11.62	11.05
Other European.....	31.16	93.32	53.31	15.81	5.58	4.48	4.73
Austrian.....	30.29	91.85	43.34	10.79	3.19	2.03	2.24
Belgian.....	24.82	93.94	52.80	11.89	4.55	3.00	5.08
Czech and Slovak.....	23.74	88.90	41.91	8.05	3.05	1.58	1.69
Dutch.....	29.84	94.68	58.57	20.99	9.63	7.42	6.29
Finnish.....	35.12	91.95	59.36	28.43	10.58	2.50	2.56
German.....	31.42	94.21	50.49	19.73	9.00	7.38	6.41
Hebrew.....	37.18	98.41	74.23	21.50	2.78	1.38	1.35
Hungarian.....	21.24	87.28	32.39	6.34	2.77	1.90	1.23
Italian.....	31.18	92.70	47.27	9.34	2.27	2.45	2.75
Polish.....	30.71	91.23	44.51	9.90	2.63	2.01	2.08
Rumanian.....	27.21	88.16	32.88	5.35	1.58	0.23	2.16
Russian.....	31.71	91.39	45.80	12.74	3.60	1.65	1.61
Scandinavian.....	31.19	95.15	58.59	19.70	0.25	2.69	4.31
Ukrainian.....	29.46	90.26	37.38	5.35	1.09	0.77	0.74
Other.....	25.49	90.94	43.68	10.66	3.53	3.85	8.38
Asiatic.....	25.21	93.75	44.44	7.57	1.84	1.60	1.30
Chinese and Japanese.....	19.91	93.18	32.96	3.15	1.14	0.90	-
Other.....	34.78	94.61	61.02	18.09	3.47	2.69	1.69
Indian and Eskimo.....	22.70	80.94	33.97	10.62	4.78	2.67	2.40
Unspecified and others.....	34.25	92.39	58.76	25.01	14.56	14.80	16.74

TABLE 26. Data used in multiple correlation between percentages of females single and selected independent variables, by specified racial origin, Canada, 1931

Racial Origin	P.C. of Females Single	Index of Age Distribution	Surplus Adult Males per 100 Adult Females	P.C. of Eligible Males	Ratio of Eligible Males to Eligible Females	P.C. of Females Illiterate (10 years and over)
English.....	30.3	93	4	42.0	1.45	0.6
Irish.....	35.1	90	6	46.8	1.41	0.7
Scottish.....	34.1	91	6	45.4	1.41	0.7
Other British.....	32.9	99	38	44.6	1.70	0.3
French.....	39.7	110	3	48.0	1.23	4.2
Austrian.....	30.3	122	59	46.0	2.19	11.1
Belgian.....	24.8	99	32	41.4	2.13	3.2
Czech and Slovak.....	23.7	111	178	33.0	3.47	8.5
Dutch.....	29.8	98	15	42.1	1.80	1.8
Finnish.....	35.1	109	57	53.9	2.24	6.8
German.....	31.4	105	17	45.9	1.67	2.5
Hebrew.....	37.2	116	4	42.9	1.17	5.4
Hungarian.....	21.2	111	119	35.1	3.27	8.7
Italian.....	31.2	122	67	43.1	2.08	11.3
Polish.....	30.7	125	65	45.0	2.16	13.2
Rumanian.....	27.2	125	88	40.0	2.41	14.7
Russian.....	31.7	124	46	44.1	1.85	16.8
Scandinavian.....	31.2	107	70	58.0	2.92	1.2
Ukrainian.....	29.5	128	49	44.0	2.01	18.2

TABLE 27. Percentage distribution of the population,

No.	Province	1931					1921 ¹		
		British	French	Other European	Indian	Asiatic	British	French	Other European
		p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.
1	CANADA.....	51.86	28.22	17.59	1.18	0.81	55.40	27.91	14.19
2	Prince Edward Island.....	83.78	14.72	0.93	0.26	0.19	85.34	13.51	0.67
3	Nova Scotia.....	76.41	11.04	10.31	0.43	0.30	77.81	10.81	9.42
4	New Brunswick.....	62.61	33.56	2.85	0.41	0.21	66.23	31.22	2.55
5	Quebec.....	15.06	78.98	5.16	0.43	0.24	15.12	80.03	3.85
6	Ontario.....	74.01	8.73	15.67	0.88	0.36	77.79	8.46	12.02
7	Manitoba.....	52.56	6.72	38.03	2.20	0.32	57.63	6.66	33.03
8	Saskatchewan.....	47.50	5.50	44.76	1.66	0.48	52.86	5.56	39.14
9	Alberta.....	53.20	5.25	38.58	2.08	0.67	59.79	5.25	31.19
10	British Columbia.....	70.57	2.16	16.16	3.54	7.34	73.87	2.14	11.72

¹ Changes in percentages from those shown in the 1921 Monograph attributable to the Labrador grant and distribution of "Various."

TABLE 28. Percentage distribution of the population,

No.	Province	British				French			
		1931	1921 ¹	1911	1901	1931	1921 ¹	1911	1901
		p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.
1	CANADA.....	51.86	55.40	54.08	57.03	28.22	27.91	28.52	30.70
2	Prince Edward Island.....	83.78	85.34	84.23	85.11	14.72	13.51	13.99	13.43
3	Nova Scotia.....	76.41	77.81	76.92	78.13	11.04	10.81	10.51	9.83
4	New Brunswick.....	62.61	66.23	65.33	71.73	33.56	31.22	28.02	24.15
5	Quebec.....	15.06	15.12	15.76	17.60	78.98	80.03	80.04	80.18
6	Ontario.....	74.01	77.79	76.25	79.34	8.73	8.46	8.01	7.27
7	Manitoba.....	52.56	57.53	57.77	64.38	6.72	6.66	6.71	6.28
8	Saskatchewan.....	47.50	52.86	50.97	43.92	5.50	5.56	4.72	2.89
9	Alberta.....	53.20	59.79	51.46	47.80	5.25	5.25	5.29	6.18
10	British Columbia.....	70.57	73.87	64.33	59.56	2.16	2.14	2.27	2.57

¹ Changes in percentages from those shown in the 1921 Monograph attributable to the Labrador grant and distribution of "Various."

by racial origin, Canada and provinces, 1901-1931

1921 ¹		1911						1901						No
Indian	Asiatic	British	French	Other European	Indian	Asiatic	British	French	Other European	Indian	Asiatic			
p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.			
1.26	0.75	54.09	28.52	12.82	1.46	0.60	57.03	39.70	8.53	2.38	0.44	1		
0.27	0.11	84.23	13.99	0.97	0.29	0.03	85.11	13.43	0.97	0.25	0.05	2		
0.39	0.29	76.92	10.51	10.14	0.39	0.14	78.13	9.83	10.20	0.35	0.08	3		
0.34	0.21	65.33	28.02	3.08	0.44	0.09	71.73	24.15	2.88	0.44	0.08	4		
0.47	0.22	15.76	80.04	2.98	0.60	0.11	17.60	80.18	1.37	0.62	0.10	5		
0.01	0.31	76.25	8.01	12.83	1.07	0.18	79.34	7.27	11.40	1.13	0.06	6		
2.27	0.28	57.77	6.71	28.09	2.87	0.21	64.35	6.28	22.37	6.38	0.10	7		
1.70	0.44	50.97	4.72	35.85	2.38	0.25	43.02	2.89	33.35	19.43	0.05	8		
2.47	0.73	51.46	5.29	30.22	3.05	0.56	47.80	6.18	26.85	18.38	0.34	9		
4.27	7.55	64.38	2.27	14.61	5.13	7.84	59.56	2.57	9.62	16.20	10.93	10		

by racial origin, Canada and provinces, 1901-1931

Other European				Indian				Asiatic				No.
1931	1921 ¹	1911	1901	1931	1921 ¹	1911	1901	1931	1921 ¹	1911	1901	
p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	
17.59	14.19	12.82	8.53	1.18	1.26	1.46	2.35	0.51	0.75	0.60	0.44	1
0.93	0.67	0.97	0.27	0.26	0.27	0.26	0.25	0.19	0.11	0.03	0.05	2
10.31	9.42	10.14	10.20	0.43	0.39	0.39	0.35	0.30	0.29	0.14	0.08	3
2.85	2.55	3.08	2.88	0.41	0.34	0.44	0.44	0.21	0.21	0.09	0.08	4
5.15	3.85	2.98	1.37	0.43	0.47	0.60	0.62	0.24	0.22	0.11	0.10	5
15.67	12.02	12.83	11.40	0.88	0.91	1.07	1.13	0.36	0.31	0.18	0.06	6
38.03	33.03	28.09	22.37	2.20	2.27	2.87	6.38	0.32	0.28	0.21	0.10	7
44.70	39.14	35.85	33.35	1.66	1.70	2.39	19.43	0.48	0.44	0.25	0.06	8
38.58	31.19	30.22	26.85	2.08	2.47	3.05	18.38	0.67	0.73	0.50	0.34	9
16.16	11.72	14.61	9.62	3.54	4.27	5.13	16.20	7.34	7.58	7.84	10.93	10

TABLE 29. Percentage distribution of the population,

No.	Birthplace	Canada			Prince Edward Island		
		1911	1921 ¹	1931	1911	1921	1931
		p.c.	p.c.	p.c.	p.c.	p.c.	p.c.
1	TOTAL	100-00	100-00	100-00	100-00	100-00	100-00
2	Canada	77-38	77-75	77-79	97-25	97-33	96-83
3	British Isles	11-16	11-67	10-98	1-49	0-04	1-03
4	British Possessions	0-41	0-45	0-44	0-25	0-26	0-28
5	Foreign born	10-44	10-15	10-82	1-00	1-49	1-85
6	Europe	5-62	5-23	6-89	0-08	0-04	0-20
7	Austria.....	0-94	0-65	0-36	1	1	0-01
8	Belgium.....	0-11	0-15	0-16	1	1	1
9	Bulgaria.....	0-28	0-01	0-01	1	1	1
10	Czechoslovakia.....	0-02	0-05	0-22	1	1	1
11	Denmark.....	0-07	0-08	0-17	1	1	0-11
12	Finland.....	0-15	0-14	0-29	1	1	1
13	France.....	0-24	0-29	0-16	0-01	0-01	0-01
14	Germany.....	0-55	0-29	0-38	0-01	1	0-01
15	Greece.....	0-04	0-04	0-05	1	1	1
16	Holland.....	0-06	0-07	0-10	0-01	1	0-02
17	Hungary.....	0-15	0-09	0-27	1	1	1
18	Iceland.....	0-10	0-08	0-06	1	1	1
19	Italy.....	0-48	0-40	0-41	0-01	0-01	0-01
20	Norway.....	0-29	0-26	0-31	0-01	0-01	0-01
21	Poland ²	0-44	0-74	1-65	1	1	1
22	Roumania.....	1	0-20	0-39	1	1	1
23	Russia.....	1-25	1-15	1-10	0-02	0-01	0-01
24	Sweden.....	0-39	0-32	0-33	0-01	1	0-01
25	Switzerland.....	1	0-04	0-06	1	1	1
26	Ukraine.....	1	0-13	0-13	1	1	1
27	Yugoslavia.....	1	0-02	0-16	1	1	1
28	Other.....	0-07	0-04	0-09	1	1	1
29	Asia	0-57	0-61	0-58	0-02	0-04	0-07
30	China.....	0-37	0-42	0-41	0-01	0-01	0-03
31	Japan.....	0-12	0-13	0-12	1	1	1
32	Syria.....	0-04	0-04	0-04	0-01	0-03	0-05
33	Turkey.....	0-03	0-01	0-01	1	1	1
34	Other.....	0-01	0-01	0-01	1	1	1
35	United States	4-21	4-20	3-32	0-89	1-37	1-57

¹ Less than one one-hundredth of one per cent and so is negligible.² Changes in 1921 attributable to deduction of part coded to Newfoundland (534) and certain printer's errors.³ Includes Galicia.

by birthplace, Canada and provinces, 1911-1931

Nova Scotia			New Brunswick			Quebec			No.
1911	1921	1931	1911	1921	1931	1911	1921	1931	
p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	
100-00	100-00	100-00	100-00	100-00	100-00	100-00	100-00	100-00	1
92-63	91-69	91-85	94-80	94-47	94-02	92-67	92-01	91-24	2
3-35	3-16	2-84	2-66	2-46	2-79	3-45	3-58	3-61	3
1-78	2-47	2-43	0-23	0-29	0-32	0-17	0-22	0-25	4
2-23	2-07	2-87	2-31	2-77	2-88	3-71	4-18	4-00	5
1-06	1-13	1-28	0-58	0-52	0-60	2-05	2-21	3-00	6
0-12	0-07	0-05	0-01	0-02	0-01	0-15	0-13	0-10	7
0-12	0-11	0-08	0-02	0-03	0-02	0-07	0-10	0-10	8
0-02	0-01	0-01	0-03	0-01	1	0-20	1	1	9
0-01	0-03	0-07	1	1	1	1	1	0-16	10
0-01	0-02	0-07	0-07	0-00	0-15	0-01	0-01	0-04	11
1	1	0-01	1	0-01	0-03	0-01	0-01	0-02	12
0-08	0-10	0-10	0-05	0-05	0-04	0-30	0-28	0-20	13
0-11	0-07	0-08	0-04	0-03	0-03	0-09	0-04	0-10	14
0-01	0-02	0-02	0-01	0-01	0-01	0-03	0-05	0-05	15
0-01	0-01	0-01	0-01	0-01	0-02	0-01	0-01	0-02	16
0-07	0-02	0-08	0-01	1	0-01	0-01	0-01	0-13	17
1	1	1	1	1	1	1	1	1	18
0-14	0-15	0-14	0-08	0-05	0-03	0-32	0-33	0-34	19
0-02	0-02	0-02	0-04	0-04	0-04	0-02	0-01	0-02	20
0-05	0-13	0-25	1	0-02	0-05	0-02	0-14	0-48	21
1	0-02	0-03	1	0-01	0-01	1	0-23	0-25	22
0-25	0-22	0-14	0-16	0-13	0-11	0-76	0-77	0-63	23
0-03	0-02	0-03	0-04	0-03	0-03	0-02	0-02	0-03	24
1	1	1	1	1	1	1	0-02	0-04	25
1	0-02	1	1	1	1	1	0-02	0-05	26
1	0-01	0-05	1	1	1	1	1	0-05	27
0-01	0-02	0-03	0-01	0-01	0-01	0-03	0-04	0-10	28
0-11	0-14	0-14	0-07	0-11	0-10	0-14	0-17	0-16	29
0-03	0-06	0-06	0-03	0-05	0-05	0-05	0-00	0-09	30
1	1	1	1	1	1	1	1	1	31
0-07	0-08	0-07	0-04	0-06	0-04	0-04	0-06	0-05	32
0-01	1	1	1	1	1	0-01	0-01	0-01	33
1	1	1	1	1	1	0-01	0-01	0-01	34
0-98	1-34	1-41	1-64	2-13	2-15	1-49	1-78	1-72	35

TABLE 29. Percentage distribution of the population,

No.	Birthplace	Ontario			Manitoba		
		1911	1921	1931	1911	1921	1931
		p.c.	p.c.	p.c.	p.c.	p.c.	p.c.
1	TOTAL.....	100-00	100-00	100-00	100-00	100-00	100-00
2	Canada.....	79-90	78-13	76-56	58-64	63-55	66-21
3	British Isles.....	13-99	15-33	14-99	20-39	18-33	14-96
4	British Possessions.....	0-20	0-30	0-35	0-21	0-21	0-17
5	Foreign born.....	5-89	6-81	8-09	20-74	17-91	18-63
6	Europe.....	3-44	3-51	5-69	16-92	14-08	15-78
7	Austria.....	0-33	0-27	0-22	5-02	2-87	1-28
8	Belgium.....	0-02	0-08	0-10	0-50	0-54	0-48
9	Bulgaria.....	0-11	0-02	0-03	0-48	1	1
10	Czechoslovakia.....	1	0-03	0-23	0-04	0-11	0-19
11	Denmark.....	0-03	0-03	0-08	0-13	0-15	0-24
12	Finland.....	0-27	0-27	0-57	0-03	0-04	0-09
13	France.....	0-07	0-08	0-06	0-68	0-48	0-32
14	Germany.....	0-59	0-31	0-31	0-93	0-37	0-51
15	Greece.....	0-04	0-05	0-09	0-01	0-02	0-02
16	Holland.....	0-03	0-04	0-11	0-16	0-17	0-21
17	Hungary.....	0-07	0-03	0-31	0-20	0-10	0-23
18	Iceland.....	0-01	1	1	0-11	0-78	0-58
19	Italy.....	0-65	0-61	0-65	0-15	0-16	0-14
20	Norway.....	0-06	0-05	0-07	0-31	0-25	0-29
21	Poland ²	0-14	0-57	1-35	2-61	3-54	5-33
22	Roumania.....	1	0-13	0-27	1	0-43	0-55
23	Russia.....	0-77	0-67	0-59	3-55	2-80	3-14
24	Sweden.....	0-15	0-11	0-14	0-84	0-65	0-59
25	Switzerland.....	1	0-03	0-04	1	0-07	0-08
26	Ukraine.....	1	0-07	0-11	1	0-89	0-27
27	Yugoslavia.....	1	0-02	0-25	1	0-01	0-10
28	Other.....	0-05	0-04	0-07	0-17	0-05	0-13
29	Asia.....	0-22	0-26	0-27	0-24	0-24	0-27
30	China.....	0-11	0-13	0-19	0-13	0-21	0-23
31	Japan.....	0-01	0-01	0-01	0-01	0-01	1
32	Syria.....	0-04	0-05	0-04	0-03	0-02	0-02
33	Turkey.....	0-05	1	0-01	0-01	1	1
34	Other.....	0-01	0-02	0-02	0-01	1	0-01
35	United States.....	2-20	2-41	2-11	3-54	3-55	2-56

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by birthplace, Canada and provinces, 1911-1931—Con.

Saskatchewan			Alberta			British Columbia			No.
1911	1921	1931	1911	1921	1931	1911	1921	1931	
p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	
100-00	100-00	100-00	100-00	100-00	100-00	100-00	100-00	100-00	1
50-52	60-44	65-44	43-23	53-55	58-21	43-14	60-34	53-98	2
16-28	13-09	10-82	18-23	16-57	14-60	28-16	29-31	26-20	3
0-17	0-15	0-13	0-38	0-31	0-26	1-90	1-31	1-11	4
53-08	50-31	45-00	58-15	50-56	46-59	40-78	19-08	18-70	5
18-50	14-30	15-23	15-70	11-85	15-53	10-22	6-04	8-47	6
3-23	2-26	1-23	2-83	1-70	0-66	1-19	0-27	0-31	7
0-20	0-28	0-25	0-27	0-28	0-21	0-20	0-10	0-13	8
1-35	0-02	0-01	0-95	0-01	0-01	0-10	0-01	0-01	9
0-11	0-12	0-26	0-10	0-19	0-61	0-10	0-11	0-26	10
0-20	0-20	0-32	0-37	0-40	0-75	0-19	0-18	0-31	11
0-11	0-10	0-09	0-27	0-21	0-18	0-64	0-30	0-73	12
0-60	0-43	0-31	0-49	0-36	0-24	0-32	0-26	0-19	13
1-68	0-85	1-07	1-63	0-78	1-11	0-78	0-29	0-52	14
0-01	0-03	0-03	0-03	0-04	0-04	0-17	0-09	0-08	15
0-13	0-13	0-13	0-30	0-30	0-34	0-10	0-10	0-18	16
1-12	0-62	0-75	0-31	0-12	0-60	0-17	0-04	0-14	17
0-27	0-18	0-11	0-00	0-04	0-03	0-06	0-06	0-04	18
0-05	0-05	0-04	0-49	0-42	0-32	2-07	0-92	0-87	19
1-66	1-22	1-16	1-54	1-13	1-21	0-95	0-68	1-10	20
1-79	1-71	3-21	1-55	1-66	4-34	0-15	0-25	0-67	21
1	0-97	1-15	1	0-52	1-12	1	0-06	0-14	22
4-09	3-74	3-40	2-68	1-97	2-13	1-01	0-83	0-86	23
1-26	0-97	0-82	1-70	1-11	1-02	1-81	1-09	1-34	24
1	0-07	0-09	1	0-13	0-15	1	0-10	0-16	25
1	0-28	0-48	1	0-37	0-24	1	0-04	0-06	26
1	0-04	0-23	1	0-05	0-17	1	0-09	0-39	27
0-10	0-03	0-08	0-13	0-06	0-17	0-38	0-06	0-10	28
0-31	0-40	0-41	0-59	0-68	0-56	6-88	6-22	5-15	29
0-24	0-36	0-39	0-48	0-59	0-49	4-80	4-10	3-40	30
0-01	0-01	0-01	0-06	0-07	0-05	2-01	2-08	1-65	31
0-04	0-03	0-03	0-02	0-02	0-02	0-03	0-02	0-02	32
0-01	1	0-01	0-01	0-01	0-01	0-03	0-01	0-01	33
0-01	0-01	0-01	0-02	1	0-01	0-01	0-01	0-02	34
14-14	11-57	7-92	21-74	16-97	10-79	0-67	6-68	5-00	35

TABLE 30. Percentage distribution of Continental European born, by

No.	Country of Birth	Canada			Prince Edward Island		
		1911	1921 ¹	1931	1911	1921	1931
		p.c.	p.c.	p.c.	p.c.	p.c.	p.c.
1	North Western Europe.....	1.80	1.51	1.73	0.03	0.02	0.17
2	Belgium.....	0.11	0.15	0.16	1	1	1
3	Denmark.....	0.07	0.08	0.17	1	1	0.11
4	France.....	0.24	0.22	0.16	0.01	0.01	0.01
5	Germany.....	0.55	0.29	0.38	0.01	1	0.01
6	Holland.....	0.05	0.07	0.10	0.01	1	0.02
7	Iceland.....	0.10	0.08	0.06	1	1	1
8	Norway.....	0.29	0.25	0.31	0.01	0.01	0.01
9	Sweden.....	0.39	0.32	0.33	1	1	0.01
10	Switzerland.....	1	0.04	0.06	1	1	1
11	South, Eastern and Central Europe.....	3.74	3.68	5.06	0.03	0.02	0.03
12	Austria.....	0.94	0.55	0.39	1	1	0.01
13	Bulgaria.....	0.28	0.01	0.01	1	1	1
14	Czechoslovakia.....	0.02	0.05	0.22	1	1	1
15	Finland.....	0.15	0.14	0.22	1	1	1
16	Greece.....	0.04	0.04	0.05	1	1	1
17	Hungary.....	0.15	0.09	0.27	1	1	1
18	Italy.....	0.48	0.40	0.41	0.01	0.01	0.01
19	Poland ²	0.44	0.74	1.65	1	1	1
20	Romania.....	1	0.28	0.39	1	1	1
21	Russia.....	1.25	1.18	1.10	0.02	0.01	0.01
22	Ukraine.....	1	0.13	0.13	1	1	1
23	Yugoslavia.....	1	0.02	0.16	1	1	1
	Country of Birth	Ontario			Manitoba		
		1911	1921	1931	1911	1921	1931
		p.c.	p.c.	p.c.	p.c.	p.c.	p.c.
24	North Western Europe.....	0.96	0.73	0.99	4.66	3.46	3.30
25	Belgium.....	0.02	0.08	0.18	0.59	0.54	0.48
26	Denmark.....	0.03	0.03	0.08	0.13	0.15	0.24
27	France.....	0.07	0.05	0.06	0.68	0.48	0.32
28	Germany.....	0.59	0.31	0.31	0.93	0.37	0.51
29	Holland.....	0.03	0.04	0.11	0.19	0.17	0.21
30	Iceland.....	0.01	1	1	1.11	0.76	0.55
31	Norway.....	0.06	0.05	0.07	0.81	0.26	0.29
32	Sweden.....	0.15	0.11	0.14	0.34	0.65	0.59
33	Switzerland.....	1	0.03	0.04	1	0.07	0.08
34	South, Eastern and Central Europe.....	2.43	2.74	4.65	12.09	10.57	12.34
35	Austria.....	0.38	0.27	0.22	5.02	2.87	1.28
36	Bulgaria.....	0.11	0.02	0.03	0.48	1	1
37	Czechoslovakia.....	1	0.03	0.23	0.04	0.11	0.19
38	Finland.....	0.27	0.27	0.57	0.03	0.04	0.09
39	Greece.....	0.04	0.05	0.09	0.01	0.02	0.02
40	Hungary.....	0.07	0.03	0.31	0.20	0.10	0.23
41	Italy.....	0.65	0.61	0.65	0.15	0.10	0.14
42	Poland ²	0.14	0.57	1.35	2.61	3.34	6.33
43	Romania.....	1	0.15	0.57	1	0.43	0.55
44	Russia.....	0.77	0.67	0.59	3.55	2.80	3.14
45	Ukraine.....	1	0.07	0.11	1	0.69	0.27
46	Yugoslavia.....	1	0.02	0.25	1	0.01	0.10

¹ Less than one one-hundredth of one per cent.² Includes Galicia.³ See footnote 2, Table 29.

geographical grouping of countries of birth, Canada and provinces, 1911-1931

Nova Scotia			New Brunswick			Quebec			No.
1911	1921	1931	1911	1921	1931	1911	1921 ^a	1931	
p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	
0-38	0-41	0-40	0-27	0-25	0-33	0-52	0-47	0-56	1
0-12	0-11	0-08	0-02	0-03	0-02	0-07	0-10	0-10	2
0-01	0-02	0-07	0-07	0-06	0-15	0-01	0-01	0-04	3
0-08	0-16	0-10	0-03	0-05	0-04	0-30	0-26	0-20	4
0-11	0-07	0-08	0-04	0-03	0-03	0-09	0-04	0-10	5
0-01	0-01	0-01	0-01	0-01	0-02	0-01	0-01	0-02	6
0-02	0-02	0-02	0-04	0-04	0-04	0-02	0-01	0-02	7
0-03	0-02	0-03	0-04	0-03	0-03	0-02	0-02	0-03	8
1	1	1	1	1	1	1	0-02	0-04	10
0-57	0-70	0-53	0-29	0-25	0-28	1-50	1-70	2-35	11
0-12	0-07	0-03	0-01	0-02	0-01	0-15	0-13	0-10	12
0-02	0-01	0-01	0-03	0-01	1	0-20	1	1	13
0-01	0-03	0-07	1	1	1	1	1	0-16	14
1	0-01	0-01	1	0-01	0-03	0-01	0-01	0-09	15
0-01	0-02	0-02	0-01	1	0-01	0-03	0-05	0-05	16
0-07	0-02	0-08	1	1	0-01	0-01	0-01	0-13	17
0-14	0-15	0-14	0-08	0-03	0-03	0-33	0-33	0-24	18
0-03	0-13	0-23	1	0-02	0-05	0-02	0-14	0-48	19
0-25	0-02	0-03	1	0-01	0-01	1	0-23	0-25	20
1	0-22	0-14	0-16	0-13	0-11	0-70	0-77	0-63	21
1	0-02	1	1	1	1	1	0-02	0-05	22
1	0-01	0-05	1	1	1	1	1	0-06	23
Saskatchewan			Alberta			British Columbia			
1911	1921	1931	1911	1921	1931	1911	1921	1931	
p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	
5-95	4-53	4-26	0-36	4-53	5-05	4-41	2-91	3-97	24
0-26	0-28	0-25	0-27	0-28	0-21	0-20	0-15	0-13	25
0-20	0-20	0-32	0-37	0-40	0-75	0-19	0-18	0-31	26
0-60	0-43	0-31	0-49	0-35	0-24	0-32	0-29	0-19	27
1-68	0-55	1-07	1-63	0-78	1-11	0-78	0-29	0-52	28
0-13	0-13	0-13	0-30	0-30	0-34	0-10	0-10	0-18	29
0-27	0-18	0-11	0-06	0-04	0-03	0-08	0-06	0-04	30
1-55	1-22	1-16	1-54	1-13	1-21	0-95	0-68	1-10	31
1-26	0-97	0-82	1-70	1-11	1-02	1-81	1-09	1-34	32
1	0-07	0-09	1	0-13	0-15	1	0-10	0-15	33
12-45	9-94	10-88	9-21	7-26	10-31	5-43	3-07	4-40	34
3-22	2-25	1-23	2-83	1-70	0-50	1-12	0-27	0-31	35
1-35	0-02	0-01	0-55	0-01	0-01	0-10	0-01	0-01	36
0-11	0-12	0-26	0-10	0-19	0-61	0-10	0-11	0-25	37
0-11	0-10	0-09	0-27	0-21	0-18	0-54	0-38	0-73	38
0-01	0-03	0-03	0-03	0-04	0-04	0-17	0-09	0-08	39
1-12	0-62	0-75	0-31	0-12	0-60	0-17	0-04	0-14	40
0-05	0-05	0-04	0-49	0-42	0-32	2-07	0-92	0-87	41
1-79	1-71	3-21	1-55	1-56	4-34	0-15	0-23	0-57	42
1	0-97	1-15	1	0-52	1-12	1	0-06	0-14	43
4-69	3-74	3-40	2-68	1-97	2-13	1-01	0-83	0-86	44
1	0-28	0-48	1	0-37	0-24	1	0-04	0-06	45
1	0-04	0-23	1	0-05	0-17	1	0-09	0-39	46

TABLE 31. Percentage distribution of Continental European born, by

No.	Country of Birth	Canada			Prince Edward Island		
		1911	1921 ^a	1931	1911	1921	1931
		p.o.	p.o.	p.o.	p.e.	p.e.	p.o.
1	Scandinavian.....	0-85	0-74	0-87	0-01	0-01	0-13
2	Denmark.....	0-07	0-08	0-17	1	1	0-11
3	Iceland.....	0-10	0-08	0-06	1	1	1
4	Norway.....	0-29	0-25	0-31	0-01	0-01	0-01
5	Sweden.....	0-39	0-32	0-33	1	1	0-01
6	Germanic.....	0-71	0-51	0-65	0-01	1	0-03
7	Belgium.....	0-11	0-15	0-16	1	1	1
8	Germany.....	0-55	0-29	0-38	0-01	1	0-01
9	Holland.....	0-05	0-07	0-10	1	1	0-02
10	Latin and Greek.....	0-52	0-70	0-85	0-01	0-01	0-01
11	Greece.....	0-04	0-04	0-05	1	1	1
12	Italy.....	0-48	0-40	0-41	0-01	0-01	0-01
13	Roumania.....	1	0-26	0-39	1	1	1
14	Slavic.....	2-91	2-72	3-64	0-02	0-01	0-02
15	Austria.....	0-94	0-65	0-36	1	1	0-01
16	Russia.....	1-25	1-15	1-10	0-02	0-01	0-01
17	Bulgaria.....	0-28	0-01	0-01	1	1	1
18	Czechoslovakia.....	1	0-02	0-22	1	1	1
19	Poland ^b	0-44	0-74	1-65	1	1	1
20	Ukraine.....	1	0-13	0-13	1	1	1
21	Yugoslavia.....	1	0-02	0-16	1	1	1
	Country of Birth	Ontario			Manitoba		
		1911	1921	1931	1911	1921	1931
		p.o.	p.o.	p.o.	p.o.	p.e.	p.o.
22	Scandinavian.....	0-23	0-19	0-29	2-39	1-83	1-70
23	Denmark.....	0-03	0-03	0-08	0-13	0-15	0-24
24	Iceland.....	0-01	1	1	1-11	0-78	0-58
25	Norway.....	0-09	0-05	0-07	0-31	0-25	0-29
26	Sweden.....	0-13	0-11	0-14	0-84	0-65	0-59
27	Germanic.....	0-64	0-43	0-58	1-59	1-08	1-20
28	Belgium.....	0-02	0-08	0-16	0-50	0-54	0-48
29	Germany.....	0-59	0-31	0-31	0-93	0-37	0-51
30	Holland.....	0-03	0-04	0-11	0-16	0-17	0-21
31	Latin and Greek.....	0-59	0-69	1-00	0-16	0-61	0-72
32	Greece.....	0-04	0-05	0-09	0-01	0-02	0-02
33	Italy.....	0-65	0-61	0-65	0-15	0-16	0-14
34	Roumania.....	1	0-13	0-27	1	0-43	0-55
35	Slavic.....	1-40	1-64	2-78	11-66	9-72	11-31
36	Austria.....	0-38	0-27	0-22	5-02	2-57	1-23
37	Russia.....	0-77	0-67	0-59	3-55	2-80	3-14
38	Bulgaria.....	0-11	0-02	0-03	0-48	1	1
39	Czechoslovakia.....	1	0-02	0-23	1	0-01	0-19
40	Poland ^b	0-14	0-57	1-35	2-61	3-34	6-33
41	Ukraine.....	1	0-07	0-11	1	0-69	0-27
42	Yugoslavia.....	1	0-02	0-25	1	0-01	0-10

... Less than one one-hundredth of one per cent.

^a See footnote 2, Table 29.

^b Includes Galicia.

Linguistic grouping of countries of birth, Canada and provinces, 1911-1931

Nova Scotia			New Brunswick			Quebec			No.
1911	1921	1931	1911	1921	1931	1911	1921 ¹	1931	
p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	
0-06	0-06	0-12	0-16	0-13	0-22	0-05	0-04	0-10	1
0-01	0-02	0-07	0-07	0-06	0-15	0-01	0-01	0-04	2
1	1	1	1	1	1	1	1	1	3
0-02	0-02	0-02	0-04	0-04	0-04	0-02	0-01	0-02	4
0-03	0-02	0-03	0-04	0-03	0-03	0-02	0-02	0-03	5
0-24	0-19	0-17	0-07	0-07	0-07	0-17	0-15	0-22	6
0-12	0-11	0-08	0-02	0-03	0-02	0-07	0-10	0-10	7
0-11	0-07	0-08	0-04	0-03	0-03	0-09	0-04	0-10	8
0-01	0-01	0-01	0-01	0-01	0-02	0-01	0-01	0-02	9
0-16	0-19	0-20	0-09	0-05	0-05	0-35	0-61	0-64	10
0-01	0-02	0-02	0-01	0-01	0-01	0-03	0-05	0-05	11
0-14	0-15	0-14	0-08	0-05	0-03	0-32	0-33	0-34	12
1	0-02	0-03	1	0-01	0-01	1	0-23	0-25	13
0-44	0-47	0-56	0-20	0-18	0-18	1-13	1-07	1-48	14
0-12	0-07	0-05	0-01	0-02	0-01	0-15	0-13	0-10	15
0-23	0-22	0-14	0-16	0-13	0-11	0-70	0-77	0-63	16
0-02	0-01	0-01	0-03	0-01	1	0-20	1	1	17
1	0-01	0-07	1	1	1	1	1	0-10	18
0-05	0-13	0-25	1	0-02	0-05	0-02	0-14	0-48	19
1	0-02	1	1	1	1	1	0-02	0-05	20
1	0-01	0-05	1	1	1	1	1	0-09	21
Saskatchewan			Alberta			British Columbia			
1911	1921	1931	1911	1921	1931	1911	1921	1931	
p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	
3-28	2-57	2-42	3-57	2-69	3-00	3-01	2-01	2-90	22
0-20	0-20	0-32	0-37	0-40	0-75	0-19	0-18	0-31	23
0-27	0-18	0-11	0-08	0-04	0-03	0-06	0-06	0-04	24
1-55	1-22	1-16	1-54	1-13	1-21	0-95	0-68	1-10	25
1-26	0-97	0-82	1-70	1-11	1-02	1-81	1-09	1-34	26
2-07	1-25	1-45	2-20	1-36	1-09	1-08	0-54	0-83	27
0-20	0-28	0-25	0-27	0-28	0-21	0-20	0-15	0-13	28
1-68	0-85	1-07	1-53	0-78	1-11	0-79	0-29	0-52	29
0-13	0-13	0-13	0-30	0-30	0-34	0-10	0-10	0-18	30
0-05	1-05	1-22	0-52	0-08	1-48	2-24	1-07	1-09	31
0-01	0-03	0-03	0-03	0-04	0-04	0-17	0-09	0-08	32
0-05	0-05	0-04	0-49	0-42	0-32	2-07	0-92	0-87	33
1	0-07	1-15	1	0-62	1-12	1	0-06	0-14	34
11-05	8-09	8-82	8-01	6-81	8-06	2-35	1-58	2-45	35
3-22	2-25	1-23	2-83	1-70	0-56	1-12	0-27	0-31	36
4-69	3-74	3-40	2-68	1-97	2-13	1-01	0-83	0-86	37
1-35	0-02	0-01	0-95	0-01	0-01	0-10	0-01	0-01	38
1	0-04	0-25	1	0-05	0-01	1	0-09	0-25	39
1-79	1-71	3-21	1-55	1-66	4-34	0-15	0-25	0-57	40
1	0-28	0-49	1	0-37	0-24	1	0-04	0-06	41
1	0-04	0-23	1	0-05	0-17	1	0-09	0-29	42

TABLE 32. Percentage distribution of the population, by specified grouping of countries of birth, Canada and provinces, 1911-1931

Country of Birth	Canada			Prince Edward Island			Nova Scotia		
	1911	1921	1931	1911	1921	1931	1911	1921	1931
	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.
Canada.....	77.98	77.75	77.76	97.25	97.33	96.83	92.63	91.69	91.85
British Isles.....	11.16	11.67	10.98	1.49	0.94	1.03	3.35	3.16	2.84
Foreign born.....	10.44	10.15	10.88	1.00	1.46	1.85	8.85	8.67	8.87
Continental Europe.....	6.62	6.23	6.89	0.08	0.04	0.20	1.06	1.13	1.28
North Western Europe.....	1.80	1.51	1.73	0.03	0.02	0.17	0.28	0.41	0.40
South, Eastern and Central Europe.....	3.74	3.68	5.06	0.03	0.02	0.03	0.67	0.70	0.85
Scandinavian.....	0.85	0.74	0.87	0.01	0.01	0.13	0.06	0.06	0.12
Latin and Greek.....	0.52	0.70	0.85	0.01	0.01	0.01	0.15	0.19	0.20
Germanic.....	0.71	0.51	0.65	0.01	-	0.03	0.24	0.19	0.17
Slavic.....	2.91	2.72	3.64	0.02	0.01	0.02	0.44	0.47	0.56
Asia.....	0.57	0.61	0.58	0.02	0.04	0.07	0.11	0.14	0.14
United States.....	4.21	4.26	3.32	0.89	1.37	1.57	0.98	1.34	1.41

Country of Birth	New Brunswick			Quebec			Ontario		
	1911	1921	1931	1911	1921	1931	1911	1921	1931
	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.
Canada.....	94.80	94.47	94.02	92.67	92.01	91.24	79.90	78.13	76.56
British Isles.....	2.66	2.46	2.79	3.45	3.58	3.61	13.99	15.35	14.99
Foreign born.....	8.81	8.77	8.86	3.71	4.18	4.80	8.89	6.81	8.09
Continental Europe.....	0.58	0.52	0.60	2.05	2.21	3.00	3.44	3.51	6.69
North Western Europe.....	0.27	0.25	0.33	0.52	0.47	0.66	0.96	0.73	0.96
South, Eastern and Central Europe.....	0.29	0.25	0.26	1.50	1.70	2.35	2.43	2.74	4.66
Scandinavian.....	0.15	0.13	0.22	0.05	0.04	0.10	0.25	0.19	0.29
Latin and Greek.....	0.09	0.06	0.05	0.35	0.61	0.64	0.69	0.69	1.00
Germanic.....	0.07	0.07	0.07	0.17	0.15	0.22	0.64	0.43	0.68
Slavic.....	0.20	0.18	0.18	1.13	1.07	1.48	1.40	1.64	2.78
Asia.....	0.07	0.11	0.10	0.14	0.17	0.15	0.22	0.26	0.27
United States.....	1.64	2.13	2.15	1.49	1.78	1.72	2.20	2.41	2.11

Country of Birth	Manitoba			Saskatchewan			Alberta			British Columbia		
	1911	1921	1931	1911	1921	1931	1911	1921	1931	1911	1921	1931
	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.
Canada.....	58.64	63.55	66.21	50.52	60.44	65.44	43.25	53.55	58.31	43.14	60.34	63.98
British Isles.....	20.39	18.32	14.98	16.28	13.09	10.82	18.23	16.57	14.50	28.16	29.31	26.20
Foreign born.....	20.74	17.91	18.69	35.08	29.31	28.60	38.13	29.66	29.98	26.78	19.08	18.70
Continental Europe.....	16.92	14.08	15.78	18.50	14.30	15.23	15.70	11.85	15.53	10.22	6.04	8.47
North Western Europe.....	4.66	3.46	3.30	6.95	4.33	4.20	6.36	4.53	6.05	4.41	2.91	3.97
South, Eastern and Central Europe.....	12.06	10.57	12.34	12.45	9.94	10.88	9.21	7.26	10.31	5.43	3.07	4.40
Scandinavian.....	2.39	1.83	1.70	3.28	2.57	2.42	3.67	2.68	3.00	3.01	2.01	2.80
Latin and Greek.....	0.16	0.61	0.72	0.06	1.06	1.22	0.52	0.98	1.48	2.24	1.07	1.09
Germanic.....	1.59	1.08	1.20	2.07	1.26	1.45	2.20	1.36	1.68	1.08	0.54	0.83
Slavic.....	11.66	9.72	11.31	11.05	8.09	8.82	8.01	5.81	8.06	2.38	1.58	2.46
Asia.....	0.24	0.24	0.27	0.31	0.40	0.41	0.59	0.68	0.56	6.88	6.22	6.15
United States.....	3.64	3.55	2.50	14.14	11.57	7.92	21.74	16.97	10.79	9.57	6.60	6.00

TABLE 33. Percentage distribution of British- and foreign-born immigrants, by year of arrival, Canada and provinces, 1931

Province	Year of Arrival						Before 1901	Year Not Stated
	Total	1926-1931	1921-1925	1916-1920	1911-1915	1901-1910		
BRITISH IMMIGRANTS								
CANADA.....	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Prince Edward Island.....	0.10	0.20	0.12	0.08	0.03	0.04	0.22	0.33
Nova Scotia.....	2.28	2.73	2.31	3.21	1.53	1.96	3.12	3.68
New Brunswick.....	1.07	2.52	0.78	1.08	0.67	0.66	1.39	0.94
Quebec.....	9.35	12.39	10.79	8.66	8.86	7.70	9.53	9.56
Ontario.....	44.44	47.76	51.33	45.08	43.68	38.32	48.19	47.05
Manitoba.....	8.96	6.07	6.69	8.34	9.82	10.81	9.47	7.25
Saskatchewan.....	8.82	7.79	8.38	7.99	8.75	10.79	6.30	12.74
Alberta.....	9.18	10.42	8.43	9.11	9.69	10.29	5.13	3.91
British Columbia.....	16.01	10.10	13.08	10.39	16.95	19.38	16.48	9.25
Yukon and Northwest Territories..	0.07	0.03	0.04	0.04	0.02	0.05	0.18	5.27
FOREIGN IMMIGRANTS								
CANADA.....	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Prince Edward Island.....	0.14	0.21	0.13	0.25	0.09	0.06	0.20	0.72
Nova Scotia.....	1.31	1.45	1.29	1.45	1.25	0.99	1.72	1.96
New Brunswick.....	1.04	1.12	0.96	1.60	0.78	0.71	1.90	1.15
Quebec.....	12.56	14.66	13.63	12.54	11.20	10.00	14.83	10.90
Ontario.....	24.74	32.46	32.53	24.20	22.95	15.73	22.50	27.15
Manitoba.....	11.62	9.82	11.25	7.63	11.69	13.26	15.00	10.25
Saskatchewan.....	19.38	14.52	14.83	17.07	22.58	26.23	15.18	24.21
Alberta.....	17.54	16.90	13.25	20.40	18.23	20.99	12.30	5.72
British Columbia.....	11.56	8.80	12.03	15.31	11.20	11.95	15.34	11.20
Yukon and Northwest Territories..	0.11	0.05	0.06	0.06	0.05	0.07	0.33	7.03

TABLE 34. Foreign-born population from ten main countries of birth, Canada and provinces, 1931

Birthplace	Canada	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	British Columbia
United States.....	344,574	1,380	7,222	8,794	49,408	72,525	17,903	73,008	78,959	34,706
Poland ¹	171,169	-	1,262	187	13,822	46,265	44,347	29,594	31,756	3,923
Russia.....	114,408	10	697	439	18,172	20,148	21,988	31,382	15,561	5,999
Italy.....	42,578	5	742	112	9,797	22,179	1,000	367	2,321	6,034
China.....	42,037	24	297	206	2,506	6,524	1,598	3,336	3,535	24,009
Germany.....	39,163	12	397	122	2,789	10,662	3,561	9,832	8,121	3,626
Austria.....	37,391	5	238	49	2,897	7,642	8,094	11,382	4,083	2,183
Sweden.....	34,415	5	140	109	860	4,708	4,138	7,580	7,431	9,333
Norway.....	32,679	6	120	168	703	2,364	2,056	10,721	8,820	7,630
Finland.....	30,354	-	63	104	2,696	19,600	604	855	1,330	5,064

¹ Includes Galicia.

TABLE 35. Percentages urban of the population, by birthplace, Canada and provinces, 1931

Birthplace	Percentage Urban in									
	Canada ¹	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	British Columbia
TOTAL	53.71	25.13	45.17	31.59	63.10	61.06	45.13	31.56	38.07	56.86
Canada	51.95	24.79	42.99	30.99	60.48	57.50	41.21	31.23	38.49	55.73
British Isles	67.52	39.56	65.23	38.19	93.05	73.30	59.86	46.33	54.64	62.62
British Possessions	77.26	53.82	85.33	71.63	93.71	77.30	68.29	53.56	57.74	61.09
Foreign born	51.49	50.55	61.10	40.06	88.32	71.58	46.89	35.59	37.99	51.93
Europe	51.02	1	72.99	46.76	94.00	71.12	46.36	22.94	25.20	44.03
Austria.....	45.90	1	73.05	61.22	93.82	73.69	33.37	27.72	41.05	38.57
Belgium.....	38.67	1	72.45	12.90	88.73	20.46	37.06	16.17	30.89	50.79
Bulgaria.....	70.82	-	80.65	88.24	66.67	77.32	65.00	19.51	47.37	58.49
Czechoslovakia.....	58.51	-	50.40	25.00	93.45	71.83	54.72	26.71	29.36	29.75
Denmark.....	40.93	24.75	30.64	20.23	89.06	53.49	46.85	25.28	31.24	49.32
Finland.....	50.59	-	17.40	32.69	93.62	52.05	33.44	10.88	15.70	40.86
France.....	55.69	1	64.34	22.22	85.19	68.37	30.78	21.27	35.02	51.56
Germany.....	42.87	1	53.65	41.80	89.64	61.56	44.40	23.83	24.42	42.47
Greece.....	91.95	-	95.83	95.12	99.54	92.71	90.37	85.29	85.03	75.38
Holland.....	39.39	1	48.28	41.94	91.63	41.41	35.80	29.96	28.18	48.69
Hungary.....	55.61	-	81.47	4.00	96.00	72.79	54.15	23.88	32.40	36.80
Iceland.....	45.61	-	1	-	1	67.71	47.54	32.22	44.66	58.27
Italy.....	79.70	1	88.14	45.54	96.47	81.37	86.10	36.78	44.33	61.27
Norway.....	39.78	1	65.83	41.07	91.18	52.83	42.80	16.42	20.19	46.84
Poland ²	51.51	-	86.09	68.98	95.34	82.05	47.22	22.14	20.86	43.16
Roumania.....	51.71	-	90.23	92.59	97.56	75.24	54.93	25.35	16.80	46.65
Russia.....	52.31	1	91.25	89.07	98.22	82.96	50.92	21.62	27.64	32.68
Sweden.....	33.16	1	43.57	43.12	89.30	46.67	42.27	18.59	20.32	38.98
Switzerland.....	50.36	-	85.22	36.36	91.01	61.16	45.02	22.64	29.42	37.68
Ukraine.....	42.90	-	60.00	1	94.14	71.79	27.30	15.18	23.94	46.04
Yugoslavia.....	61.14	-	47.76	1	86.61	66.01	70.27	59.52	32.66	46.60
Other.....	68.71	-	82.04	72.00	96.84	78.20	58.21	29.64	31.62	43.52
Asia	74.68	93.94	93.10	83.33	95.95	89.81	83.22	87.27	79.33	65.27
China.....	82.01	1	98.90	91.75	98.36	92.64	85.04	91.57	86.18	75.13
Japan.....	45.53	-	83.33	1	100.00	81.55	93.33	90.11	33.71	44.54
Syria.....	84.52	1	89.04	74.29	93.19	88.78	67.86	42.97	54.63	75.23
Turkey.....	86.43	-	1	1	97.90	84.96	78.70	67.35	81.36	76.74
Other.....	74.30	-	83.33	80.00	87.80	74.09	68.75	56.47	46.00	62.04
United States	48.04	27.61	46.62	36.15	76.55	70.41	47.03	27.45	29.30	51.57

¹ Numbers too small for percentages to be significant.² Includes Galicia.³ Includes Yukon and Northwest Territories.

TABLE 36. Percentages urban of Continental European born, by geographical grouping of countries of birth, Canada and provinces, 1931

Country of Birth	Percentage Urban in									
	Canada ¹	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	British Columbia
North Western										
Europe.....	30-56	26-32	55-44	27-52	58-01	40-42	41-69	20-55	24-59	43-99
Belgium.....	38-67	1	72-45	12-90	88-73	20-46	37-09	16-17	30-89	50-79
Denmark.....	40-93	24-75	30-04	20-23	89-08	53-40	45-85	25-29	31-25	49-32
France.....	55-09	1	64-34	22-22	85-19	68-37	30-78	21-27	35-02	51-56
Germany.....	42-87	1	53-65	41-80	89-64	61-56	44-40	23-83	24-42	42-47
Holland.....	39-39	1	48-28	41-94	91-63	41-41	35-80	20-96	28-18	48-69
Iceland.....	45-61	1	1	1	1	67-71	47-54	32-22	44-86	56-27
Norway.....	30-78	1	65-83	41-07	91-18	52-83	42-80	16-42	20-19	46-84
Sweden.....	33-16	1	43-57	43-12	89-30	46-67	42-27	18-59	20-32	38-98
Switzerland.....	50-36	1	65-22	36-36	91-01	61-16	45-02	22-64	29-42	37-68
South, Eastern and Central Europe.....	54-63	50-00	80-33	69-38	96-07	75-50	47-48	23-78	25-24	44-07
Austria.....	45-90	1	73-05	61-22	93-82	73-69	33-37	27-72	41-06	38-67
Bulgaria.....	70-82	1	80-65	58-24	66-67	77-32	65-00	19-61	47-37	58-49
Czechoslovakia.....	58-51	1	50-40	25-00	95-43	71-83	54-72	25-71	29-39	29-75
Finland.....	50-69	1	17-46	32-69	93-92	52-05	33-44	10-88	15-79	49-86
Greece.....	91-95	1	95-83	95-12	99-54	92-71	90-37	85-29	85-93	75-38
Hungary.....	65-61	1	81-47	4-00	96-00	72-79	54-18	23-88	32-40	35-80
Italy.....	79-70	1	88-14	45-54	96-47	81-37	86-10	36-78	44-33	61-27
Poland ²	51-51	1	68-09	68-98	95-34	82-05	47-22	22-14	20-89	43-16
Roumania.....	61-71	1	90-23	92-59	97-56	75-24	54-93	25-35	16-80	46-65
Russia.....	52-31	1	91-25	89-07	98-22	82-96	50-62	21-62	27-64	32-68
Ukraine.....	42-90	1	60-00	1	94-14	71-79	27-30	15-18	23-94	46-94
Yugoslavia.....	61-14	1	47-76	1	86-61	65-01	70-27	59-52	32-66	46-90

¹ Numbers too small for percentages to be significant.² Includes Galicia.³ Includes Yukon and Northwest Territories.

TABLE 37. Percentages urban of Continental European born, by linguistic grouping of countries of birth, Canada and provinces, 1931

Country of Birth	Percentage Urban in									
	Canada ¹	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	British Columbia
Scandinavian.....	34-58	25-79	40-83	26-90	89-65	50-20	44-80	19-05	23-24	43-49
Denmark.....	40-93	24-75	30-04	20-23	89-08	53-49	46-85	25-29	31-24	49-32
Iceland.....	45-61	1	1	1	1	67-71	47-54	32-22	44-86	56-27
Norway.....	30-78	1	65-83	41-07	91-18	52-83	42-80	16-42	20-19	46-84
Sweden.....	33-16	1	43-57	43-12	89-30	46-67	42-27	18-59	20-32	38-98
Germanic.....	41-24	24-14	62-81	32-13	89-37	46-43	39-96	23-07	26-00	45-09
Belgium (Flemish).....	38-67	1	72-45	12-90	88-73	20-46	37-09	16-17	30-89	50-79
Germany.....	42-87	1	53-65	41-80	89-64	61-56	44-40	23-83	24-42	42-47
Holland.....	39-39	1	48-28	41-94	91-63	41-41	35-80	20-96	28-18	48-69
Latin and Greek.....	65-89	58-33	80-67	48-33	94-22	80-04	52-40	25-09	25-93	59-03
France.....	55-09	1	64-34	22-22	85-19	68-37	30-78	21-27	35-02	51-56
Greece.....	91-95	1	95-83	95-12	99-54	92-71	90-37	85-29	85-93	75-38
Italy.....	79-70	1	88-14	45-54	96-47	81-37	86-10	36-78	44-33	61-27
Roumania.....	61-71	1	90-23	92-59	97-56	75-24	54-93	25-35	16-80	46-65
Slavic.....	51-83	50-00	78-40	79-72	95-79	78-74	46-53	23-44	25-07	38-20
Austria.....	45-90	1	73-05	61-22	93-82	73-69	33-37	27-72	41-06	38-67
Bulgaria.....	70-82	1	80-65	58-24	66-67	77-32	65-00	19-61	47-37	58-49
Czechoslovakia.....	58-51	1	50-40	25-00	93-45	71-83	54-72	25-71	29-39	29-75
Poland ²	51-51	1	68-09	68-98	95-34	82-05	47-22	22-14	20-89	43-16
Russia.....	52-31	1	91-25	89-07	98-22	82-96	50-92	21-62	27-64	32-68
Ukraine.....	42-90	1	60-00	1	94-14	71-79	27-30	15-18	23-94	46-94
Yugoslavia.....	61-14	1	47-76	1	86-61	65-01	70-27	59-52	32-66	46-90

¹ Numbers too small for percentages to be significant.² Includes Galicia.³ Includes Yukon and Northwest Territories.

TABLE 38. Percentages urban of male and female immigrants, by birthplace, Canada, 1931

Birthplace	P.C. Urban		P.C. by Which Proportion of Females Urban Exceeded Proportion of Males Urban
	Males	Females	
TOTAL	51.59	56.00	4.41
Total immigrants	57.33	63.15	5.82
<i>British born</i>	65.07	71.10	6.03
Europe	49.49	53.44	3.95
Austria.....	44.71	47.65	2.94
Belgium.....	36.73	41.23	4.50
Bulgaria.....	70.03	74.28	4.25
Czechoslovakia.....	59.82	54.93	-4.89
Denmark.....	38.50	46.80	8.30
Finland.....	44.48	60.10	15.62
France.....	51.43	60.55	9.12
Germany.....	39.82	47.56	7.74
Greece.....	91.71	92.56	0.82
Holland.....	37.73	42.32	4.59
Hungary.....	56.30	54.29	-2.01
Iceland.....	41.09	50.07	8.98
Italy.....	77.70	83.27	5.57
Norway.....	28.95	34.57	5.62
Poland ¹	50.82	52.51	1.69
Roumania.....	50.71	53.21	2.47
Russia.....	50.66	54.28	3.62
Sweden.....	31.21	37.02	6.41
Switzerland.....	47.86	55.68	7.72
Ukraine.....	43.57	41.82	-1.75
Yugoslavia.....	58.90	67.54	8.64
Other.....	65.50	74.11	8.61
Asia	75.92	67.01	-8.91
China.....	81.95	83.52	1.57
Japan.....	42.99	50.16	7.17
Syria.....	81.91	88.17	6.26
Turkey.....	84.32	89.45	5.13
Other.....	72.51	76.80	4.35
United States	43.48	52.70	9.28
North Western Europe	36.62	44.09	8.07
South, Eastern and Central Europe	53.82	55.80	2.04
Scandinavian countries	32.31	39.33	7.02
Germanic countries	38.72	45.05	6.33
Latin and Greek countries²	66.96	69.02	2.06
Slavic countries	51.12	52.84	1.72

¹ Includes Galicia.² France not included.

TABLE 39. Percentages urban of males and females 21 years of age and over, by racial origin, Canada, 1931

Racial Origin	P.C. Urban		Racial Origin	P.C. Urban	
	Males	Females		Males	Females
ALL RACES	53-25	60-02	European—Con.	69-45	75-07
British.....	56-23	63-11	Lithuanian.....	26-44	34-23
English.....	58-43	64-27	Norwegian.....	40-73	52-00
Irish.....	52-70	61-05	Polish.....	50-02	48-05
Scottish.....	55-00	62-07	Romanian.....	32-31	28-97
Other.....	56-69	63-83	Russian.....	31-37	40-11
European	50-88	56-94	Swedish.....	34-90	33-13
French.....	54-79	60-57	Ukrainian ¹	55-38	62-41
Austrian.....	40-41	44-41	Yugoslavic.....	50-51	55-86
Belgian.....	37-87	43-67	Other.....	75-40	67-49
Bulgarian.....	78-55	83-43	Asiatic	32-09	37-42
Czech and Slovak.....	57-49	51-13	Chinese.....	42-12	50-02
Danish.....	38-81	48-16	Japanese.....	32-77	37-69
Dutch.....	34-90	40-77	Syrian.....	62-54	76-50
Finnish.....	42-90	57-42	Other.....	63-11	66-56
German.....	37-63	44-91	Negro.....	60-17	62-36
Greek.....	90-38	89-86	Other.....	65-16	73-10
Hebrew.....	95-95	96-92	Unspecified.....	3-61	4-47
Hungarian.....	55-95	51-02	Indian.....	-	-
Islandic.....	38-93	50-86	Eskimo.....	-	-
Italian.....	78-05	83-85			

¹ Includes Bukovinian, Galician, Ruthenian and Ukrainian.**TABLE 40. Percentages of specified racial origins in cities of 30,000 and over, by geographical grouping of origins, Canada, 1931, as compared with percentages for the same cities, 1921**

Racial Origin	P.C. in Cities of 30,000 and over		Racial Origin	P.C. in Cities of 30,000 and over	
	1921	1931		1921	1931
North Western European—			South, Eastern and Central European—		
Belgian.....	17-70	18-21	Con.....	65-38	64-71
Danish.....	18-85	22-61	Greek.....	10-99	30-36
French.....	23-36	26-70	Hungarian.....	48-48	51-67
German.....	13-64	17-30	Italian.....	29-85	28-38
Dutch.....	12-36	13-42	Romanian.....	26-33	25-39
Islandic.....	16-57	22-97	Russian.....	13-32	13-83
Norwegian.....	7-11	10-65	Ukrainian ¹	10-17	16-88
Swedish.....	10-92	15-35	Yugoslavic.....	23-84	28-55
South, Eastern and Central European—			Asiatic—		
Austrian.....	13-42	17-11	Chinese.....	47-05	56-10
Czech and Slovak.....	11-13	27-56	Japanese.....	31-78	38-39
Finnish.....	6-32	18-04	Syrian.....	43-67	44-15

¹ Includes Bukovinian, Galician, Ruthenian and Ukrainian.**TABLE 41. Percentages of specified racial origins in cities of 30,000 and over, by linguistic grouping of origins, Canada, 1931, as compared with percentages for the same cities, 1921**

Racial Origin	P.C. in Cities of 30,000 and over		Racial Origin	P.C. in Cities of 30,000 and over	
	1921	1931		1921	1931
Scandinavian—			Latin and Greek—		
Danish.....	18-88	22-61	Greek.....	65-38	64-71
Islandic.....	16-57	22-97	Italian.....	48-48	51-67
Norwegian.....	7-11	10-65	Romanian.....	26-33	25-39
Swedish.....	10-92	15-35	Slavic—		
Germanic—			Austrian.....	13-42	17-11
Belgian.....	17-70	18-21	Czech and Slovak.....	11-13	27-56
German.....	13-64	17-30	Polish.....	29-85	28-38
Dutch.....	12-36	13-42	Russian.....	13-32	13-83
			Ukrainian ¹	10-17	16-88
			Yugoslavic.....	23-84	28-55

¹ Includes Bukovinian, Galician, Ruthenian and Ukrainian.

TABLE 42. Data used in computing an index of segregation of immigrants from specified countries of birth, Canada, 1931(Distribution over the 221 counties¹ or census divisions of the Dominion)

Birthplace	Total in Canada	Average per County	Number of Counties Having				
			Two or More Times the Average	Average but Less than Twice	Less than Average but Half Average or More	Less than Half Average	None
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
TOTAL	10,376,786	46,954	14	36	87	84	-
England.....	723,884	3,275	17	26	39	139	-
Ireland.....	107,544	487	13	20	45	138	5
Scotland.....	279,765	1,266	16	17	46	137	5
Wales.....	22,348	101	21	28	30	101	43
Austria.....	37,391	169	30	18	20	111	42
Belgium.....	17,033	77	22	16	23	122	38
Bulgaria.....	1,467	7	22	15	13	47	124
Czechoslovakia.....	22,835	103	24	28	21	87	63
Denmark.....	17,217	78	26	28	23	112	32
Finland.....	30,354	137	16	13	8	128	56
France.....	16,756	75	22	21	32	139	7
Germany.....	39,163	177	35	20	19	124	21
Greece.....	8,579	35	16	18	17	81	89
Holland.....	10,736	49	25	20	20	96	51
Hungary.....	28,523	129	26	12	18	96	69
Iceland.....	5,731	26	14	7	11	55	134
Italy.....	42,578	193	21	7	15	155	28
Lithuania.....	5,704	26	15	18	21	77	90
Norway.....	32,679	148	37	16	8	116	44
Poland.....	171,169	778	27	18	18	127	31
Roumanian.....	40,322	182	27	12	14	128	40
Russia.....	114,406	518	24	20	11	143	23
Sweden.....	34,415	156	36	21	8	122	34
Switzerland.....	6,076	27	27	24	28	90	52
Yugoslavia.....	17,110	77	26	13	13	78	91
China.....	42,037	190	16	12	22	148	23
Japan.....	12,261	55	7	1	5	62	146
United States.....	344,574	1,559	32	19	31	139	-

¹ The Yukon and Northwest Territories are here considered as census divisions and Lennox and Addington one county.² Includes Galicia.**TABLE 43. Intermarriage and related data, for specified racial origins, Canada, 1931**

Racial Origin	(1) P.C. of Married Males Married to Wives of Different Origin ¹	(2) P.C. of Married Females Married to Husbands of Different Origin ¹	(3) P.C. of Origin North American-Born	(4) Surplus Adult Males per 100 Adult Females	(5) P.C. Which Adults of Each Origin Constitute of Total Adult Population	(6) Index of Segregation	(7) P.C. of Adult Males Urban
Austrian.....	25	23	56	56	0.43	221	40
Belgian.....	44	40	43	32	0.27	261	38
Czech and Slovak.....	21	20	32	178	0.34	222	57
Danish.....	57	47	49	103	0.36	110	39
Dutch.....	47	44	86	15	1.40	189	35
Finnish.....	12	27	32	57	0.52	617	43
German.....	28	30	79	17	4.44	179	38
Hebrew.....	3	1	47	4	1.55	896	96
Hungarian.....	10	12	29	119	0.43	464	56
Icelandic.....	41	40	71	2	0.19	156	39
Indian.....	5	10	100	9	1.00	845	3
Italian.....	23	9	55	67	0.81	809	78
Norwegian.....	51	52	65	66	0.91	188	28
Polish.....	21	27	48	65	1.33	308	50
Roumanian.....	32	24	52	88	0.24	339	50
Russian.....	29	20	58	46	0.74	289	32
Swedish.....	61	57	56	84	0.84	143	31
Ukrainian ²	9	14	67	49	1.82	546	85

¹ Based on parentage of children born 1930-32 inclusive.² Includes Bukovinian, Galician, Ruthenian and Ukrainian

TABLE 44. Intermarriage with Anglo-Saxons and related data, for specified racial origins,¹ Canada, 1931

Racial Origin	(1) P.C. of Married Males Married to Anglo- Saxon Wives	(2) P.C. of Married Females Married to Anglo- Saxon Husbands	(3) Surplus Adult Males per 100 Adult Females	(4) P.C. of Race North American- Born	(5) P.C. Which Adults of Race Con- stitute of Total Adult Population	(6) Index of Religious Assimil- ability	(7) First Pre- diction (males)	(8) First Pre- diction (females)
Austrian.....	6.6	7.0	56	56	0.43	22	18.4	16.9
Belgian.....	15.2	14.3	32	43	0.27	10	7.7	9.0
Bulgarian.....	23.3	5.4	198	34	0.63	8	13.0	6.9
Czech and Slovak.....	5.2	6.3	178	32	0.34	18	8.7	4.4
Danish.....	36.4	31.3	103	49	0.35	93	16.5	13.6
Dutch.....	35.6	35.4	15	86	1.40	69	33.5	31.7
Finnish.....	6.2	12.1	57	32	0.52	98	0.2	1.8
German.....	18.9	21.2	17	79	4.44	18	13.9	17.8
Greek.....	20.7	1.2	187	45	0.09	69	20.4	13.3
Hungarian.....	2.1	3.6	119	29	0.43	27	2.1	1.3
Icelandic.....	27.1	29.7	2	71	0.19	99	27.4	26.1
Italian.....	10.5	5.1	67	35	0.81	7	16.6	15.3
Hebrew.....	1.8	0.7	4	47	1.55	1	2.7	7.0
Norwegian.....	30.3	31.3	66	65	0.91	97	23.5	21.1
Polish.....	3.2	4.9	65	48	1.33	11	8.5	9.3
Romanian.....	6.2	3.2	88	82	0.24	12	18.4	15.6
Russian.....	5.9	6.5	40	58	0.74	30	17.8	16.4
Swedish.....	33.3	35.5	84	56	0.94	97	19.3	16.1
Ukrainian ²	0.9	1.9	49	57	1.82	6	12.0	13.0
Yugoslavian.....	4.6	2.8	326	21	0.20	9	10.8	0.4
Average.....	14.7	13.0	88	51	0.85	44	14.5	12.9

¹ Based on parentage of children born in 1930-32 inclusive.² Includes Bukovinian, Galician, Ruthenian and Ukrainian.

TABLE 45. Percentages naturalized of European born, by geographical grouping of countries of birth, Canada, 1931

Birthplace	P.C. Natura- lized	Birthplace	P.C. Natura- lized
North Western Europe.....	52.3	South, Eastern and Central Europe.....	48.3
Iceland.....	91.1	Italy.....	62.8
France.....	66.1	Greece.....	65.7
Sweden.....	59.8	Austria.....	59.9
Norway.....	56.5	Russia.....	59.0
Belgium.....	49.7	Roumania.....	57.8
Germany.....	47.1	Bulgaria.....	47.7
Switzerland.....	41.4	Poland ¹	46.9
Holland.....	36.9	Ukraine.....	44.7
Denmark.....	31.2	Finland.....	28.7
		Hungary.....	22.4
		Czechoslovakia.....	20.0
		Yugoslavia.....	19.7

¹ Includes Galicia.

TABLE 46. Percentages naturalized of European born, by linguistic grouping of countries of birth, Canada, 1931

Country of Birth	P.C. Naturalized	Country of Birth	P.C. Naturalized
Scandinavian.....	55.1	Latin and Greek.....	60.5
Iceland.....	91.1	Italy.....	62.8
Sweden.....	50.8	Greece.....	62.7
Norway.....	56.6	Roumania.....	57.8
Denmark.....	31.2	Slavic.....	48.9
Germanic.....	46.1	Austria.....	59.9
Belgium.....	40.7	Russia.....	59.0
Germany.....	47.1	Bulgaria.....	47.7
Holland.....	36.9	Poland ¹	46.9
		Ukraine.....	44.7
		Czechoslovakia.....	30.0
		Yugoslavia.....	19.7

¹ Includes Galicia.

TABLE 47. Percentages naturalized of foreign-born males 21 years of age and over, by birthplace, Canada, 1921 and 1931

Birthplace	P.C. Naturalized		Birthplace	P.C. Naturalized	
	1921	1931		1921	1931
Iceland.....	88.5	92.2	Germany.....	65.8	45.5
Armenia.....	1	78.9	Poland ¹	47.0	45.5
Syria.....	60.6	76.9	Spain.....	1	44.9
South America.....	41.9	78.3	Bulgaria.....	16.4	42.4
Turkey.....	57.7	73.7	Ukraine.....	49.2	42.3
United States.....	57.7	68.1	Holland.....	49.7	38.1
France.....	56.2	65.6	Switzerland.....	52.9	37.9
Russia.....	50.3	62.4	Japan.....	32.8	35.0
Italy.....	28.2	61.1	Denmark.....	54.6	31.3
Greece.....	28.3	60.6	Finland.....	41.0	28.3
Roumania.....	56.9	56.2	Lithuania.....	1	25.0
Sweden.....	64.2	55.9	Hungary.....	72.3	19.7
Austria.....	55.6	56.9	Yugoslavia.....	28.1	16.5
Norway.....	70.3	54.4	Czechoslovakia.....	64.4	15.6
Belgium.....	44.3	50.7	China.....	3.8	5.4

¹ Separate data not available in the 1921 tabulation.² Includes Galicia.

TABLE 48. Percentages naturalized of United States- and other foreign-born immigrants, by racial origin and corresponding countries of birth, Canada, 1931

Racial Origin	(1) P.C. of United States-Born Immigrant Population Naturalized	(2) P.C. of Immigrant Population Naturalized of Birth- place Correspond- ing to Origin, 1931	(3) P.C. Difference Col. 1 - Col. 2	(4) P.C. of Population of Various Origins United States- Born
British.....	72.3	-	-	-
French.....	83.8	66.1	17.7	1.90
Austrian.....	54.3	59.9	-5.6	2.32
Belgian.....	62.9	49.7	13.2	2.45
Czech and Slovak.....	63.0	20.0	43.0	4.05
Danish.....	65.0	31.2	33.8	11.37
Dutch.....	66.7	36.9	29.8	6.53
Finnish.....	65.6	25.7	39.9	3.40
German.....	65.2	47.1	18.1	9.50
Greek.....	69.9	62.7	7.2	1.88
Hebrew.....	65.0	-	-	2.77
Hungarian.....	52.5	22.4	30.1	1.68
Icelandic.....	84.0	91.1	-7.1	5.22
Italian.....	61.9	62.8	-0.9	2.12
Negro.....	52.0	-	-	11.36
Norwegian.....	74.4	56.5	17.9	23.01
Polish.....	59.9	46.9	13.0	1.25
Roumanian.....	58.9	57.8	1.1	1.04
Russian.....	64.9	59.0	5.9	3.48
Swedish.....	71.4	59.8	11.6	13.22
Syrian.....	69.0	74.1	-5.1	2.01
Ukrainian ¹	67.3	44.7	22.6	0.32
Yugoslavian.....	59.3	19.7	39.6	1.48

¹ Includes Bukovinian, Galician, Ruthenian and Ukrainian.

TABLE 49. Percentages naturalized of foreign-born immigrants, by year of arrival, Canada, 1931

Birthplace	Total Naturalized	Year of Arrival						
		1926-1931	1921-1925	1916-1920	1911-1915	1901-1910	Before 1901	Not Stated
	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.
Austria.....	59.9	5.7	46.6	58.0	62.4	84.4	94.1	26.1
Belgium.....	49.7	5.0	36.5	56.5	58.2	82.0	85.4	28.1
Bulgaria.....	47.7	10.4	37.2	51.9	58.4	74.4	-	-
Czechoslovakia.....	20.0	3.2	31.7	58.4	75.9	86.8	92.1	-
Denmark.....	31.2	2.2	27.2	54.6	75.4	85.2	87.3	16.7
Finland.....	28.7	2.7	18.9	45.8	61.1	75.1	83.4	22.2
France.....	66.1	14.1	46.3	63.9	67.5	76.6	82.6	36.3
Germany.....	47.1	3.0	34.0	55.4	76.0	88.0	90.1	42.9
Greece.....	62.7	20.3	56.7	72.4	74.0	80.1	77.0	-
Holland.....	36.9	2.9	23.4	49.3	74.4	83.5	82.2	-
Hungary.....	22.4	3.5	36.2	37.1	76.1	91.6	94.7	15.4
Iceland.....	91.1	12.4	63.3	60.7	84.4	92.4	96.9	15.2
Italy.....	62.8	29.3	57.5	66.4	69.0	74.6	81.2	40.0
Norway.....	56.5	6.3	36.3	58.9	82.8	91.0	89.9	12.8
Poland.....	46.9	4.1	45.1	59.7	65.6	85.1	94.2	36.9
Roumania.....	57.8	4.4	45.3	61.1	64.4	86.5	95.6	4.1
Russia.....	50.0	5.4	48.9	57.8	73.4	89.5	70.7	34.6
Sweden.....	50.8	4.4	39.7	57.2	77.7	88.3	90.0	16.5
Switzerland.....	41.4	4.8	21.2	52.9	74.5	84.1	87.4	-
Ukraine.....	44.7	3.6	37.4	48.6	54.9	82.6	93.8	33.3
Yugoslavia.....	19.7	3.5	37.8	50.0	67.4	82.3	93.2	-
China.....	7.0	36.3	10.5	6.0	4.9	6.1	8.7	8.1
Japan.....	37.3	20.4	24.0	26.5	42.2	47.0	65.7	50.9
Syria.....	74.1	23.0	56.9	71.5	78.8	82.5	85.9	-
Turkey.....	74.1	25.0	72.3	74.4	88.1	86.6	93.8	-
United States.....	72.4	41.4	58.6	60.8	78.8	87.6	91.1	63.5
North Western Europe.....	52.3	4.2	31.5	58.1	75.6	86.7	89.6	27.3
South, Eastern and Central Europe.....	48.3	5.1	43.6	63.4	67.5	84.9	95.4	33.3
Scandinavian countries.....	55.1	4.3	30.6	57.7	79.7	89.5	92.2	15.1
Germanic countries.....	46.1	3.3	32.4	56.7	72.7	86.2	89.4	40.5
Latin and Greek countries.....	60.6	14.6	54.7	66.1	67.4	81.0	89.2	40.9
Slavic countries.....	48.9	4.3	44.7	64.3	67.7	86.3	84.5	33.5

¹ Includes Galicia.² France not included in Latin and Greek group.

TABLE 50. Percentages naturalized of all foreign born, compared with percentages naturalized in cities of 30,000 and over, by birthplace, Canada, 1931

Birthplace	(1) P.C. Naturalized in Cities of 30,000 and over	(2) P.C. of Total Foreign-Born Population Naturalized (urban and rural)	(3) Excess of Col. 2 over Col. 1
ALL FOREIGN COUNTRIES.....	15.5	54.8	39.3
Europe.....	15.5	49.1	33.6
Austria.....	14.1	59.9	45.8
Belgium.....	9.7	49.7	40.0
Bulgaria.....	23.6	47.7	24.1
Czechoslovakia.....	3.3	20.0	16.7
Denmark.....	6.9	31.2	24.3
Finland.....	3.4	28.7	25.3
France.....	19.2	66.1	46.9
Germany.....	10.4	47.1	36.7
Greece.....	42.9	52.7	19.8
Holland.....	10.3	36.9	26.6
Hungary.....	4.9	22.4	17.5
Iceland.....	22.4	91.1	68.7
Italy.....	31.3	62.8	31.5
Norway.....	6.0	56.5	50.5
Poland.....	15.9	46.9	31.0
Roumania.....	17.3	57.8	40.5
Russia.....	26.2	59.0	32.8
Sweden.....	7.9	59.8	51.9
Switzerland.....	11.8	41.4	29.6
Ukraine.....	8.6	44.7	36.1
Yugoslavia.....	6.7	19.7	13.0
Other.....	17.8	36.5	18.7
Asia.....	8.4	20.0	11.6
China.....	3.4	7.0	3.6
Japan.....	12.7	37.3	24.6
Syria.....	33.0	74.1	41.1
Turkey.....	42.2	71.7	29.5
Other.....	30.9	70.3	39.4
United States.....	16.7	72.4	55.7
Other countries.....	29.8	73.6	43.8

¹ Includes Galicia.

TABLE 51. Percentages naturalized of foreign-born population, by birthplace and sex, and percentage excess of naturalized females over males, Canada, 1931

Birthplace	(1) P.C. of Foreign-Born Males Naturalized	(2) P.C. of Foreign-Born Females Naturalized	(3) Excess of Col. 2 over Col. 1
ALL FOREIGN COUNTRIES.....	48.6	63.8	15.2
Europe.....	45.0	55.7	10.7
Austria.....	54.6	67.9	13.3
Belgium.....	47.5	52.6	5.1
Bulgaria.....	43.0	67.8	24.8
Czechoslovakia.....	15.3	32.8	17.5
Denmark.....	29.2	36.0	6.8
Finland.....	25.0	33.4	7.8
France.....	54.5	68.0	3.6
Germany.....	42.3	54.3	12.2
Greece.....	59.8	71.4	11.6
Holland.....	34.1	41.7	7.6
Hungary.....	18.4	30.1	11.7
Iceland.....	91.5	90.8	- 0.7
Italy.....	60.4	67.1	6.7
Norway.....	32.4	65.1	32.7
Poland ¹	42.5	53.2	10.7
Roumania.....	53.6	64.3	10.7
Russia.....	58.0	60.3	2.3
Sweden.....	54.7	71.3	16.6
Switzerland.....	36.9	50.5	13.7
Ukraine.....	39.8	52.4	12.6
Yugoslavia.....	16.2	29.6	13.6
Other.....	33.0	42.4	9.4
Asia.....	15.0	50.9	35.9
China.....	5.8	39.8	34.0
Japan.....	34.7	42.1	7.4
Syria.....	75.6	71.9	- 3.7
Turkey.....	70.1	73.9	3.8
Other.....	70.4	70.1	- 0.3
United States.....	67.4	77.6	10.2
Other countries.....	70.3	77.3	7.0

¹ Includes Galicia.

TABLE 52. Percentages naturalized of foreign-born population, by birthplace, Canada and provinces, 1931

Birthplace	Percentage Naturalized in									
	Canada	Prince Edward Island	Nova Scotia	New Brun- swick	Quebec	Ontario	Mani- toba	Saskat- chewan	Alberta	British Columbia
ALL FOREIGN COUNTRIES.....	54.8	72.7	62.8	70.7	62.8	48.4	60.2	65.1	66.3	43.1
Europe.....	49.1	16.8	43.0	42.1	39.8	42.0	59.6	60.9	47.9	44.6
Austria.....	59.9	-	38.7	63.1	52.9	43.9	72.2	68.2	53.1	46.5
Belgium.....	49.7	-	36.3	53.8	44.5	29.5	62.0	70.4	57.3	74.2
Bulgaria.....	47.7	-	41.0	-	31.9	47.8	-	72.0	54.0	49.1
Czechoslovakia.....	20.0	-	28.3	-	3.8	10.5	26.4	35.7	24.6	39.1
Denmark.....	31.2	2.0	15.9	18.6	16.0	25.1	33.0	38.2	31.6	42.6
Finland.....	28.7	-	12.7	9.6	7.7	26.0	34.9	64.1	66.8	33.9
France.....	66.1	-	46.4	49.7	60.0	63.6	83.1	80.1	74.1	71.0
Germany.....	47.1	-	48.9	39.3	28.3	34.0	43.5	50.7	44.2	41.6
Greece.....	62.7	-	68.8	73.2	60.6	63.2	55.6	71.3	66.7	64.5
Holland.....	26.9	-	45.3	12.9	38.0	23.8	40.9	63.6	39.7	44.7
Hungary.....	22.4	-	20.7	2.0	5.6	17.8	26.0	45.9	10.4	40.2
Iceland.....	91.1	-	-	-	-	78.1	91.9	91.8	89.7	55.0
Italy.....	62.8	-	62.4	50.0	49.4	68.6	71.3	68.4	65.7	62.1
Norway.....	56.5	-	50.8	40.5	27.3	45.2	49.9	66.3	58.3	49.1
Poland ¹	46.9	-	41.8	48.1	27.9	40.6	59.7	62.2	42.8	37.5
Roumania.....	57.8	-	33.9	63.0	52.6	37.7	63.0	72.8	65.0	46.0
Russia.....	50.0	-	58.0	73.4	62.2	65.1	56.8	62.7	53.6	30.0
Sweden.....	69.8	-	42.9	48.6	34.1	48.8	65.1	73.1	65.5	50.4
Switzerland.....	41.4	-	-	-	27.5	30.8	50.7	48.8	50.1	43.2
Ukraine.....	44.7	-	36.0	-	21.9	29.5	65.0	55.5	48.2	41.3
Yugoslavin.....	19.7	-	6.5	-	6.8	15.5	24.5	48.4	18.2	19.0
Asia.....	20.0	50.0	51.7	49.7	37.6	34.4	17.8	13.9	15.7	14.2
China.....	7.0	-	18.9	20.4	14.8	17.0	9.3	5.9	8.8	3.0
Japan.....	37.3	-	-	-	66.3	57.5	53.3	45.1	50.1	36.2
Syria.....	74.1	70.2	76.1	83.4	65.7	78.3	77.1	81.1	81.0	91.7
Turkey.....	71.7	-	-	-	66.4	76.2	57.6	63.3	62.7	76.7
United States.....	72.4	81.1	81.8	79.7	76.8	67.3	67.8	77.6	70.4	69.7

¹ Includes Galicia.

TABLE 53. Percentages by which the proportion naturalized of foreign born in each province differed from the proportion naturalized for Canada, by birthplace, 1931

Birthplace	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	British Columbia
	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.
ALL FOREIGN COUNTRIES.....	+17.9	+ 8.0	+15.9	- 2.0	- 6.4	+ 5.4	+15.3	+ 1.5	-11.7
Europe.....	-32.3	- 6.1	- 7.0	- 9.3	- 7.1	+10.5	+10.9	- 1.2	- 4.5
Austria.....	-	-21.2	- 6.8	- 7.0	-16.0	+12.3	+ 8.3	- 6.8	-13.4
Belgium.....	-	+ 6.0	+ 4.1	- 5.2	-20.2	+12.3	+20.7	+ 7.6	+24.5
Bulgaria.....	-	- 5.8	-	-15.8	+ 0.1	-	+24.3	+ 6.3	+ 1.4
Czechoslovakia.....	-	+ 6.3	-	-16.2	- 3.5	+ 6.4	+15.7	+ 4.5	+19.1
Denmark.....	-29.2	-15.3	-12.6	-15.2	- 6.1	+ 1.8	+ 7.0	+ 0.4	+11.4
Finland.....	-	-16.0	-19.1	-21.0	- 2.7	+ 6.2	+35.4	+38.1	+ 5.2
France.....	-	-19.7	-16.4	-18.1	- 2.5	+17.0	+20.8	+ 8.0	+ 4.9
Germany.....	-	+ 1.3	- 7.8	-18.8	+ 9.9	- 3.6	+ 3.0	- 2.9	- 5.5
Greece.....	-	+ 6.1	+10.5	- 2.1	- 0.5	- 7.1	+ 8.0	+ 4.0	+ 1.8
Holland.....	-	+11.4	-24.0	+ 1.1	-11.1	+ 4.0	+16.7	+ 2.8	+ 7.8
Hungary.....	-	- 1.7	-20.4	-16.8	- 4.9	+ 3.6	+23.5	-12.0	- 1.6
Iceland.....	-	-	-	-	-13.0	+ 0.8	+ 0.7	- 1.4	- 5.2
Italy.....	-	-10.4	-12.8	-13.4	+ 5.8	+ 8.5	+ 5.0	+ 2.9	- 0.7
Norway.....	-	- 5.7	-16.0	-20.2	-11.3	- 6.6	+ 9.8	+ 1.8	- 7.4
Poland.....	-	- 5.1	+ 1.2	-10.0	- 6.3	+12.8	+ 5.3	+ 4.1	- 9.4
Romania.....	-	-22.9	+ 5.2	- 5.2	-20.1	+ 5.2	+15.0	+ 7.2	-11.8
Russia.....	-	+ 9.0	+14.4	+ 3.2	+ 6.1	- 2.2	+ 3.7	- 5.4	-29.0
Sweden.....	-	-10.9	-11.2	-25.7	-11.0	+ 5.3	+13.3	+ 5.7	- 9.4
Switzerland.....	-	-	-	-13.9	- 4.6	+ 9.3	+ 7.4	+ 8.7	+ 1.8
Ukraine.....	-	- 8.7	-	-12.8	-15.2	+20.3	+10.8	+ 3.5	- 3.4
Yugoslavia.....	-	-13.2	-	-12.9	- 4.2	+ 4.8	+28.7	+ 1.5	- 0.7
Asia.....	+30.0	+31.7	+29.7	+17.0	+14.4	- 2.2	- 6.1	- 4.3	- 5.8
China.....	-	+11.9	+13.4	+ 7.8	+10.0	+ 2.3	- 1.1	+ 1.8	- 4.0
Japan.....	-	-	-	+19.0	+20.2	+16.0	+ 7.8	+12.8	- 1.1
Syria.....	+ 2.1	+ 1.0	+ 9.3	- 8.4	+ 4.2	+ 3.0	+ 7.0	+ 7.4	+17.6
Turkey.....	-	-	-	- 5.3	+ 4.5	-14.1	- 8.4	- 9.0	+ 5.6
United States.....	+ 8.7	+ 9.4	+ 7.3	+ 4.4	- 5.1	- 4.6	+ 5.2	- 2.0	- 2.7

* Includes Galicia.

TABLE 54. Range of fluctuations of percentages naturalized of foreign born as between provinces, by birthplace, Canada, 1921 and 1931

Birthplace	P.C. Range of Fluctuation		Birthplace	P.C. Range of Fluctuation	
	1921	1931		1921	1931
Austria.....	60.5	33.5	Norway.....	41.3	39.0
Belgium.....	44.7	44.7	Poland.....	49.2	31.8
Bulgaria.....	52.8	40.0	Romania.....	54.4	38.9
Czechoslovakia.....	43.5	35.3	Russia.....	25.3	43.4
Denmark.....	20.6	40.5	Sweden.....	36.8	39.0
Finland.....	40.7	50.1	Switzerland.....	23.7	23.2
France.....	52.7	39.7	Ukraine.....	59.7	43.1
Germany.....	44.4	25.7	Yugoslavia.....	45.6	41.8
Greece.....	26.0	17.6	China.....	15.4	17.4
Holland.....	51.4	40.7	Japan.....	28.7	21.3
Hungary.....	51.8	43.9	Syria.....	38.3	26.1
Iceland.....	23.2	13.8	Turkey.....	36.0	19.2
Italy.....	37.6	21.9	United States.....	27.1	14.5

* Includes Galicia.

TABLE 55. Percentages unable to speak (1) English (2) English or French, of the population 10 years of age and over, by geographical and linguistic grouping of non-British and non-French racial origins, Canada, 1921 and 1931

Racial Origin	P.C. Unable to Speak			
	English		English or French	
	1921	1931	1921	1931
North Western European ¹	3.6	3.0	3.0	2.4
Belgian ¹	17.1	8.8	4.1	1.4
Danish.....	1.4	1.3	1.4	1.2
Dutch.....	7.7	3.9	7.7	3.9
German.....	1.9	2.7	1.7	2.5
Icelandic.....	5.9	3.0	5.9	3.0
Norwegian.....	1.4	1.4	1.3	1.3
Swedish.....	2.3	1.6	2.2	1.6
Swiss ²	2.5	-	0.6	-
South, Eastern and Central European.....	18.3	13.6	17.5	13.0
Austrian, n.o.s.....	18.3	8.4	18.2	8.2
Czech and Slovak.....	6.4	14.3	6.2	14.1
Finnish.....	14.8	17.7	14.1	17.7
Greek.....	7.6	6.5	6.5	5.9
Hungarian.....	10.5	17.3	10.4	17.2
Italian.....	19.0	9.5	14.0	5.4
Polish.....	13.8	14.0	13.8	13.8
Roumanian.....	13.7	9.7	13.4	9.4
Russian.....	17.0	13.2	16.9	13.1
Ukrainian ⁴	26.2	15.4	26.2	15.3
Scandinavian.....	2.1	1.6	2.1	1.5
Danish.....	1.4	1.3	1.4	1.2
Icelandic.....	5.9	3.0	5.9	3.0
Norwegian.....	1.4	1.4	1.3	1.3
Swedish.....	2.3	1.6	2.2	1.6
Germanic ³	3.0	3.0	3.4	2.8
Dutch.....	7.7	3.9	7.7	3.9
German.....	1.9	2.7	1.7	2.5
Latin and Greek.....	17.3	9.3	13.3	6.3
Greek.....	7.0	6.5	6.5	5.9
Italian.....	19.0	9.5	12.3	5.4
Roumanian.....	13.7	9.7	13.4	9.4
Slavic.....	19.0	13.9	18.0	13.8
Austrian.....	18.3	8.4	18.2	8.2
Bulgarian.....	18.3	11.8	18.0	10.9
Czech and Slovak.....	6.4	14.3	6.2	14.1
Polish.....	13.8	14.0	13.6	13.8
Russian.....	17.0	13.2	16.9	13.1
Ukrainian ⁴	26.2	15.4	26.2	15.3
Yugoslavic.....	9.1	14.2	8.0	14.1

¹ In 1921 40 p.c. of the Belgians spoke French as mother tongue; the figure 17.1 omitted from average.

² Flemish included with "Other Europeans" in 1931.

³ Included with French, Italian or German in 1931.

⁴ Includes Bukovinian, Galician, Ruthenian and Ukrainian.

TABLE 56. Percentages speaking (1) English (2) English or French as mother tongue, of the population 10 years of age and over, of the principal European racial origins, by geographical grouping of origins, Canada, 1921 and 1931

Racial Origin	P.C. Speaking as Mother Tongue			
	English		English or French	
	1921	1931	1921	1931
North Western European.....	42.9	40.2	43.4	41.3
Belgian.....	25.0	10.1	37.8	35.5
Danish.....	31.1	29.7	31.2	29.9
Dutch.....	72.2	67.1	72.3	67.2
German.....	45.9	41.2	46.0	41.8
Icelandic.....	6.1	14.3	6.1	14.4
Norwegian.....	17.0	25.3	17.1	25.5
Swedish.....	17.4	24.1	17.4	24.2
Swiss ¹	50.5	-	61.8	-
South, Eastern and Central European.....	3.7	5.0	4.0	5.3
Austrian.....	3.4	10.1	3.5	10.4
Bulgarian.....	3.2	5.5	3.4	6.3
Czech and Slovak.....	10.4	5.5	10.5	5.6
Finnish.....	3.0	3.7	3.0	3.7
Greek.....	8.5	12.1	8.8	13.3
Hungarian.....	3.2	2.7	3.2	2.8
Italian.....	5.8	7.7	7.5	9.8
Polish.....	5.5	5.4	5.5	5.6
Rumanian.....	2.8	5.7	2.9	6.0
Russian.....	4.2	7.5	4.2	7.6
Ukrainian ²	0.6	1.8	0.6	1.9
Yugoslavian.....	5.0	2.5	5.1	2.5

¹ Included with French, German or Italian in 1931.

² Includes Bukovinian, Galician, Ruthenian and Ukrainian.

TABLE 57. Percentages speaking (1) English (2) English or French as mother tongue, of the population 10 years of age and over, of the principal European racial origins, by linguistic grouping of origins, Canada, 1921 and 1931

Racial Origin	P.C. Speaking as Mother Tongue			
	English		English or French	
	1921	1931	1921	1931
Scandinavian.....	17.9	24.6	17.9	24.7
Danish.....	31.1	29.7	31.2	29.9
Icelandic.....	6.1	14.3	6.1	14.4
Norwegian.....	17.0	25.3	17.1	25.5
Swedish.....	17.4	24.1	17.4	24.2
Germanic.....	52.0	45.8	52.7	47.3
Belgian.....	25.0	10.1	37.8	35.5
Dutch.....	72.2	67.1	72.3	67.2
German.....	45.9	41.2	46.0	41.8
Latin and Greek.....	5.4	7.6	6.9	9.2
Greek.....	8.5	12.1	8.8	13.3
Italian.....	5.5	7.7	7.5	9.8
Rumanian.....	2.8	5.7	2.9	6.0
Slavic.....	3.3	4.6	3.4	4.8
Austrian.....	3.4	10.1	3.5	10.4
Bulgarian.....	3.2	5.5	3.4	6.3
Czech and Slovak.....	10.4	5.5	10.5	5.6
Russian.....	5.5	5.4	5.5	5.6
Polish.....	5.0	2.5	5.1	2.5
Ukrainian ¹	0.6	1.8	0.6	1.9
Yugoslavian.....	4.2	7.5	4.2	7.6

¹ Includes Bukovinian, Galician, Ruthenian and Ukrainian.

TABLE 58. Number and percentage of the population 10 years of age and over, of the principal non-British and non-French racial origins who did not know English as mother tongue but had acquired it, Canada, 1931

Racial Origin	Number 10 Years of Age and over					P.C. Who Had Acquired English
	Total	Unable to Speak English	Speaking English as Mother Tongue	Not Speaking English as Mother Tongue Col. 1-Col. 3	Who Had Acquired English Col. 4-Col. 2	
	(1)	(2)	(3)	(4)	(5)	(6)
European—						
Austrian, n.o.s.	37,448	3,147	3,775	33,873	30,526	90.5
Belgian	21,508	1,822	2,176	19,332	17,440	90.2
Bulgarian	2,307	271	126	2,181	1,910	87.5
Czech and Slovak	24,730	3,532	1,370	23,360	19,828	85.0
Danish	27,424	351	8,145	19,279	18,928	98.4
Dutch	115,432	4,515	77,473	37,959	33,444	88.4
Finnish	38,145	6,761	1,396	36,749	29,988	81.6
German	368,310	9,942	151,837	216,473	206,531	95.4
Greek	6,535	448	538	6,097	5,649	92.6
Hebrew	130,223	4,345	2,452	127,771	123,426	96.7
Hungarian	31,857	5,320	868	31,019	25,499	82.2
Icelandic	15,594	468	2,237	13,357	12,889	96.4
Italian	71,975	6,815	5,539	66,436	59,631	89.9
Lithuanian	4,942	796	214	4,728	3,932	83.1
Norwegian	74,218	1,050	18,773	55,445	54,395	98.1
Polish	112,258	15,731	6,110	106,138	90,457	85.0
Romanian	21,290	2,056	1,215	20,075	18,019	90.8
Russian	64,906	8,596	4,848	56,059	51,493	85.7
Swedish	66,248	1,053	15,945	50,303	49,259	98.0
Ukrainian ¹	168,348	25,849	3,109	145,239	139,390	84.4
Yugoslavian	13,404	1,904	333	13,071	11,167	85.7
Other	4,957	320	1,545	3,312	2,992	90.4
Asiatic—						
Chinese	43,840	12,969	209	43,631	30,662	70.4
Japanese	16,547	3,532	79	16,468	12,916	78.5
Hindu	1,153	291	42	1,111	820	73.7
Syrian	7,976	551	925	7,051	6,500	92.2
Other	1,840	220	180	1,660	1,440	86.8
Eskimo	4,262	4,081	8	4,254	173	4.1
Indian	87,295	28,863	5,061	82,237	53,374	64.9
Various²	113,266	33,063	26,207	87,059	55,996	62.0

n.o.s.—not otherwise specified.

¹ Includes Bukovinian, Galician, Ruthenian and Ukrainian.

² Includes Negro and unspecified.

TABLE 59. Number and percentage of the population 10 years of age and over, of the principal non-British and non-French racial origins who did not know French as mother tongue but had acquired it, Canada, 1931

Racial Origin	Number 10 Years of Age and over					P.C. Who Had Acquired French
	Total	Unable to Speak French	Speaking French as Mother Tongue	Not Speaking French as Mother Tongue Col. 1-Col. 3	Who Had Acquired French Col. 4-Col. 2	
	(1)	(2)	(3)	(4)	(5)	(6)
European—						
Austrian, n.o.s.	37,448	36,462	117	37,331	869	2.3
Belgian	21,508	9,798	5,456	16,052	6,254	39.0
Bulgarian	2,307	2,183	19	2,288	105	4.6
Czech and Slovak	24,730	24,326	20	24,710	384	1.6
Danish	27,424	26,650	65	27,359	709	2.6
Dutch	115,432	113,496	128	115,304	1,807	1.6
Finnish	38,145	37,820	27	38,118	298	0.8
German	368,310	358,350	1,936	366,374	7,524	2.1
Greek	6,535	6,643	33	6,852	1,206	17.6
Hebrew	130,223	109,469	85	130,188	20,719	15.9
Hungarian	31,887	31,355	20	31,867	612	1.9

n.o.s.—not otherwise specified.

TABLE 59. Number and percentage of the population 10 years of age and over, of the principal non-British and non-French racial origins who did not know French as mother tongue but had acquired it, Canada, 1931—Con.

Racial Origin	Number 10 Years of Age and over					P.C. Who Had Acquired French
	Total	Unable to Speak French	Speaking French as Mother Tongue	Not Speaking French as Mother Tongue Col. 1-Col. 3	Who Had Acquired French Col. 4-Col. 2	
	(1)	(2)	(3)	(4)	(5)	(6)
European—Con.						
Icelandic.....	15,594	15,500	1	15,593	93	0.6
Italian.....	71,975	54,065	1,499	70,479	16,411	23.3
Lithuanian.....	4,942	4,288	6	4,936	648	13.1
Norwegian.....	74,215	73,286	178	74,040	754	1.0
Polish.....	112,338	108,959	106	112,132	3,173	2.8
Rumanian.....	21,309	20,148	58	21,232	1,084	5.1
Russian.....	64,935	63,306	99	64,800	1,500	2.3
Swedish.....	66,248	65,327	63	66,180	853	1.3
Ukrainian ¹	168,348	166,463	53	168,295	1,809	1.1
Yugoslavia.....	13,404	13,232	3	13,401	169	1.3
Other.....	4,057	3,913	260	4,697	784	16.7
Asiatic—						
Chinese.....	43,840	43,400	5	43,835	435	1.0
Japanese.....	19,547	18,445	1	19,546	101	0.6
Hindia.....	1,153	1,142	2	1,151	9	0.8
Syrian.....	7,876	4,876	232	7,744	2,868	37.0
Other.....	1,840	1,480	10	1,830	350	19.1
Eskimo.....	4,262	4,260	—	4,262	2	—
Indian.....	87,298	80,452	850	86,442	5,930	6.9
Negro.....	15,120	14,844	93	15,027	383	2.5
Various and unspecified.....	6,588	6,332	58	6,531	199	3.0

¹ Includes Bukovinian, Galician, Ruthenian and Ukrainian.

TABLE 60. Percentages of the population 10 years of age and over, of the principal non-British and non-French racial origins who did not know English as mother tongue but had acquired it, by geographical and linguistic grouping of origins, Canada, 1931

Racial Origin	P.C. Who Had Acquired English	Racial Origin	P.C. Who Had Acquired English
North Western European.....	95.0	Scandinavian.....	97.7
Belgian.....	90.9	Danish.....	98.4
Danish.....	98.4	Icelandic.....	96.4
Dutch.....	93.4	Norwegian.....	93.1
German.....	95.4	Swedish.....	98.0
Icelandic.....	96.4		
Norwegian.....	98.1	Germanic.....	91.3
Swedish.....	98.0	Belgian.....	90.2
		Dutch.....	88.4
South, Eastern and Central European.....	87.4	German.....	95.4
Austrian, n.o.s. ¹	90.5		
Bulgarian.....	87.5	Latin and Greek.....	91.1
Czech and Slovak.....	85.0	Greek.....	92.6
Finnish.....	81.0	Italian.....	89.9
Greek.....	92.0	Rumanian.....	90.8
Hungarian.....	82.2		
Italian.....	89.9	Slavic.....	85.9
Lithuanian.....	83.1	Austrian, n.o.s. ¹	90.5
Polish.....	85.0	Bulgarian.....	87.5
Rumanian.....	90.8	Czech and Slovak.....	85.0
Russian.....	85.7	Lithuanian.....	83.1
Ukrainian ¹	84.4	Polish.....	85.0
Yugoslavia.....	85.7	Russian.....	85.7
		Ukrainian ¹	84.4
		Yugoslavia.....	85.7

n.o.s.—not otherwise specified.

¹ Includes Bukovinian, Galician, Ruthenian and Ukrainian.

TABLE 61. Data used in correlation between the learning of English and associated factors, by racial origin, Canada, 1931

Racial Origin	X ¹ P.C. Not Knowing English as Mother Tongue Who Had Acquired It (1)	X ² P.C. North American- Born (2)	X ³ P.C. Urban (21 and over) (3)	X ⁴ Index of Segre- gation (4)	X ⁵ P.C. of Origin between 10 and 20 Years (5)
Austrian, n.o.s.	90.5	56.02	41.9	221	25.1
Belgian	90.2	43.04	40.4	261	19.7
Bulgarian	87.5	34.02	77.9	60	12.2
Chinese	70.4	11.65	82.3	290	5.3
Czech and Slovak	85.0	31.80	55.8	292	14.0
Danish	98.4	48.68	41.8	110	18.5
Dutch	88.4	36.44	37.6	189	17.4
Finnish	81.0	31.50	48.6	617	23.0
German	95.4	78.98	41.0	176	18.0
Greek	92.6	44.84	90.3	60	25.8
Hebrew	96.7	46.61	96.4	896	16.4
Hungarian	82.2	29.42	54.6	404	21.6
Icelandic	96.4	70.66	44.8	156	23.9
Indian	65.0	100.00	4.0	846	25.3
Italian	89.0	35.24	80.3	809	18.0
Japanese	78.5	48.58	44.6	630	22.6
Norwegian	93.1	65.11	29.4	138	23.8
Polish	85.0	48.30	50.6	308	24.4
Rumanian	90.8	51.77	49.7	339	24.9
Russian	85.7	57.50	30.9	289	20.5
Swedish	98.0	55.85	34.4	143	27.8
Ukrainian	84.4	57.30	33.8	540	11.3
Yugoslavian	85.7	21.49	56.8	200	

n.o.s.—not otherwise specified.

¹ Includes Bukovinian, Galician, Ruthenian and Ukrainian.**TABLE 62. Percentages illiterate of the population 10 years of age and over, by racial origin, nativity and sex, Canada, 1931**

Racial Origin	P.C. Illiterate					
	Total		British Born		Foreign Born	
	Males	Females	Males	Females	Males	Females
ALL RACES¹	3.94	2.76	3.27	1.87	7.72	9.99
English	1.01	0.84	1.02	0.65	0.60	0.44
Irish	1.39	0.74	1.42	0.79	0.78	0.41
Scottish	0.93	0.73	0.94	0.74	0.46	0.38
Other British	0.50	0.30	0.51	0.30	0.44	0.26
French	8.10	4.22	8.23	4.27	1.96	2.97
Austrian, n.o.s.	10.08	11.05	1.61	1.49	14.95	20.17
Belgian	3.55	3.21	1.38	0.83	4.32	4.31
Bulgarian	8.52	13.71	—	—	9.17	24.36
Czech and Slovak	8.47	8.53	0.93	0.69	9.62	11.07
Danish	1.14	1.18	0.81	0.59	1.21	1.53
Dutch	2.21	1.70	2.40	1.49	1.68	2.01
Finnish	6.46	0.89	1.02	0.65	7.58	6.71
German	2.63	2.51	1.81	1.10	3.38	5.25
Greek	4.74	11.02	0.68	0.50	5.67	17.22
Hebrew	2.24	5.39	0.36	0.43	3.37	8.39
Hungarian	8.93	8.71	0.72	0.92	10.22	11.19
Icelandic	0.99	1.22	0.43	0.23	1.78	2.51
Italian	7.63	11.27	1.33	1.09	10.82	20.18
Lithuanian	10.26	11.74	1.68	1.11	12.25	17.53
Norwegian	1.08	1.12	0.57	0.49	1.26	1.48
Polish	10.74	13.16	3.80	2.74	13.84	20.92
Rumanian	11.24	14.73	1.45	1.85	15.33	24.86
Russian	10.31	16.77	3.19	6.70	14.44	25.58
Swedish	1.23	1.24	0.69	0.53	1.42	1.71
Ukrainian	10.89	17.82	1.42	2.22	17.29	33.54
Yugoslavian	9.51	13.74	0.60	2.35	10.13	16.50
Other European	4.06	3.92	2.36	2.02	5.20	5.79
Chinese	17.41	17.21	3.08	2.47	17.90	33.40
Japanese	9.34	14.33	1.26	1.11	12.07	20.57
Other Asiatic	11.63	15.63	10.06	3.61	12.90	26.53
Negro	9.05	7.10	10.22	7.59	2.88	3.78
Various	8.91	7.59	3.92	4.00	14.00	13.79
Unspecified	5.28	4.73	5.11	4.85	6.28	8.97

n.o.s.—not otherwise specified.

¹ Exclusive of Yukon and Northwest Territories.² Exclusive of Indians and Eskimos.

TABLE 63. Percentages illiterate of foreign-born population 10 years of age and over, of the principal non-British and non-French racial origins, by geographical and linguistic grouping of origins, Canada, 1921 and 1931

Racial Origin	P.C. Illiterate		Racial Origin	P.C. Illiterate	
	1921	1931		1921	1931
North Western European.....	3-36	3-02	Scandinavian—Con.		
Belgian.....	6-59	4-32	Norwegian.....	1-40	1-34
Danish.....	1-74	1-31	Swedish.....	2-67	1-52
German.....	4-90	4-48			
Dutch.....	1-68	2-20	Germanic.....	3-03	4-11
Icelandic.....	3-15	2-15	Belgian.....	6-59	4-32
Norwegian.....	1-40	1-34	German.....	4-90	4-48
Swedish.....	2-67	1-52	Dutch.....	1-68	2-20
South, Eastern and Central European..	22-31	16-61			
Austrian.....	35-08	10-91	Latin and Greek.....	19-45	14-72
Bulgarian.....	23-56	12-33	Greek.....	11-59	8-67
Czech and Slovak.....	11-94	10-16	Italian.....	23-08	14-22
Finnish.....	12-59	8-03	Rumanian.....	27-08	18-61
Greek.....	11-59	8-67			
Hungarian.....	15-73	10-53	Slavic.....	24-45	18-70
Italian.....	23-58	14-23	Austrian.....	35-08	16-91
Polish.....	24-40	16-48	Bulgarian.....	23-56	12-33
Roumanian.....	27-03	18-61	Czech and Slovak.....	11-94	10-16
Russian.....	23-02	18-87	Polish.....	24-40	16-48
Ukrainian.....	30-46	23-72	Russian.....	23-02	18-87
Yugoslavia.....	22-72	11-42	Ukrainian.....	30-46	23-72
			Yugoslavia.....	22-72	11-42
Scandinavian.....	1-81	1-44			
Danish.....	1-74	1-31			
Icelandic.....	3-16	2-15			

TABLE 64. Foreign-born penitentiary inmates 21 years of age and over and number per 100,000 population, by citizenship and birthplace, Canada, 1931

Birthplace	Penitentiary Inmates			Rates per 100,000 Population		
	Total	Naturalized	Alien	Total	Naturalized	Alien
ALL FOREIGN COUNTRIES.....	690	241	455	72	44	109
Europe.....	384	153	231	61	46	77
Austria.....	49	15	34	138	53	252
Belgium.....	6	2	4	40	25	58
Bulgaria.....	4	2	2	294	313	277
Czechoslovakia.....	3	-	3	15	-	19
Denmark.....	10	5	5	66	96	60
Finland.....	12	7	5	43	84	26
France.....	13	0	7	82	50	136
Germany.....	17	5	12	49	28	71
Greece.....	1	1	-	19	34	-
Holland.....	4	2	2	45	64	39
Hungary.....	7	3	4	30	51	23
Iceland.....	1	1	-	18	22	-
Italy.....	51	19	32	134	78	231
Norway.....	9	4	5	30	22	40
Poland.....	77	32	45	52	41	62
Roumania.....	23	9	14	63	40	98
Russia.....	78	34	44	80	54	125
Sweden.....	6	3	3	2	1	1
Switzerland.....	9	2	7	160	82	218
Ukraine.....	2	1	1	10	17	17
Yugoslavia.....	2	-	2	14	-	17
Asia.....	77	7	70	132	63	148
China.....	73	5	68	178	198	177
Japan.....	1	1	-	9	23	-
Syria.....	1	1	-	27	36	-
Turkey.....	2	-	2	247	-	980
United States.....	227	78	149	83	35	212
Other countries.....	8	3	5	67	62	85

¹ Includes Galicia.

NOTE.—The reader is cautioned against regarding rates based on small numbers as reliable. Collectively, they may have significance but individually they mean little.

TABLE 65. Numerical distribution of the population 10 years of age and over

No.	Occupation Group	Birthplace					
		All Countries ¹		Canada		British Isles	
		Males	Females	Males	Females	Males	Females
1	ALL OCCUPATIONS¹	3,261,368	665,863	2,130,008	501,901	539,531	94,754
2	Agriculture.....	1,107,786	24,079	774,699	16,726	112,380	2,023
3	Fishing, Hunting, and Trapping.....	47,408	497	41,100	492	1,130	1
4	Lodging.....	43,995	-	29,940	-	1,778	-
5	Mining, Quarrying, Oil and Salt Wells.....	58,585	6	26,915	3	9,822	-
6	Manufacturing.....	358,023	84,667	216,928	63,590	83,527	12,416
7	Vegetable Products.....	29,629	6,681	18,793	5,239	6,652	856
8	Animal Products.....	42,576	7,847	27,431	6,745	7,110	615
9	Textile Products.....	37,167	58,043	19,322	42,856	6,168	8,219
10	Wood Products, Pulp, Paper, and Paper Products.....	42,430	3,254	28,990	2,525	7,394	692
11	Printing and Publishing.....	22,805	3,389	15,070	2,490	6,023	747
12	Metal Products.....	165,148	3,661	96,770	2,462	45,148	1,020
13	Other ²	18,168	1,752	10,652	1,287	5,042	367
14	Electric Light and Power (including stationary enginem ³).....	32,453	3	18,149	3	10,134	-
15	Building and Construction.....	202,971	90	129,816	65	46,427	28
16	Transportation and Communication.....	248,595	17,235	171,069	13,928	46,148	2,479
17	Railway Transportation.....	83,748	15	49,834	15	16,368	-
18	Water Transportation.....	29,433	216	21,359	159	5,382	52
19	Road Transportation.....	96,199	50	71,103	34	16,238	8
20	Other Transportation and Communication.....	39,218	16,953	28,783	13,720	8,160	2,416
21	Warehousing and Storage.....	28,992	8,200	14,578	6,141	10,200	1,600
22	Commercial.....	259,799	54,113	173,022	41,651	44,778	7,987
23	Finance, Insurance.....	36,252	571	25,976	425	6,929	80
24	Service.....	287,622	347,475	162,903	254,515	66,133	50,889
25	Public Administration and Defence.....	31,231	193	19,171	143	10,376	41
26	Professional.....	120,775	117,794	82,217	101,784	24,820	8,266
27	Recreational.....	7,452	626	4,588	428	1,849	108
28	Personal ⁴	128,164	228,862	56,932	152,160	29,589	42,474
29	Clerical.....	124,140	116,927	86,417	94,397	30,811	16,159
30	Other (labourers and unskilled workers).....	425,407	11,707	258,114	9,763	60,001	1,020

¹ The totals for "All Countries" include birthplace "Other" and "Not Given."² Includes "Non-Metallic Mineral Products," "Chemical and Allied Products" and "Miscellaneous Products."TABLE 66. Percentage¹ distribution of the population 10 years of age and over

No.	Occupation Group	Birthplace					
		All Countries		Canada		British Isles	
		Males	Females	Males	Females	Males	Females
1	ALL OCCUPATIONS	p.c. 100.00	p.c. 100.00	p.c. 100.00	p.c. 100.00	p.c. 100.00	p.c. 100.00
2	Agriculture.....	33.97	3.62	36.37	3.33	21.19	2.14
3	Fishing, Hunting, and Trapping.....	1.45	0.07	1.93	0.10	0.21	-
4	Lodging.....	1.35	-	1.41	-	0.34	-
5	Mining, Quarrying, Oil and Salt Wells.....	1.80	-	1.26	-	1.85	-
6	Manufacturing.....	10.98	12.71	10.18	12.67	15.74	13.10
7	Vegetable Products.....	0.91	1.00	0.89	1.04	1.25	0.90
8	Animal Products.....	1.31	1.18	1.28	1.34	1.34	0.65
9	Textile Products.....	1.14	8.72	0.91	8.54	1.10	8.67
10	Wood Products, Pulp, Paper, and Paper Products.....	1.30	0.49	1.38	0.50	1.39	0.62
11	Printing and Publishing.....	0.70	0.51	0.71	0.50	1.14	0.79
12	Metal Products.....	5.06	0.55	4.54	0.49	8.61	1.08
13	Other.....	0.56	0.25	0.50	0.22	0.95	0.39
14	Electric Light and Power (including stationary enginem ³).....	1.00	-	0.85	-	1.91	-
15	Building and Construction.....	6.22	0.01	6.07	0.01	8.75	0.03
16	Transportation and Communication.....	7.63	2.59	8.03	2.78	8.70	2.61
17	Railway Transportation.....	2.57	-	2.34	-	3.09	-
18	Water Transportation.....	0.99	0.03	1.00	0.03	1.02	0.05
19	Road Transportation.....	2.95	0.01	3.34	0.01	3.06	0.01
20	Other Transportation and Communication.....	1.20	2.55	1.35	2.73	1.54	2.55
21	Warehousing and Storage.....	0.83	1.23	0.68	1.29	1.92	1.69
22	Commercial.....	7.97	8.13	8.12	8.30	8.44	8.43
23	Finance, Insurance.....	1.11	0.09	1.22	0.08	1.31	0.08
24	Service.....	8.82	52.18	7.65	50.71	12.47	53.71
25	Public Administration and Defence.....	0.95	0.03	0.90	0.03	1.99	0.04
26	Professional.....	3.70	17.69	3.86	20.29	4.68	8.72
27	Recreational.....	0.23	0.09	0.22	0.09	0.25	0.11
28	Personal.....	3.93	34.37	2.67	30.39	5.55	44.83
29	Clerical.....	3.81	17.60	4.06	18.81	5.81	17.05
30	Other (labourers and unskilled workers).....	13.04	1.76	12.12	1.85	11.31	1.08

¹ The percentage distribution in this table does not total 100.00 because the group "Unspecified" is not included.² Less than one one-hundredth of one per cent.

reporting gainful occupations, of specified birthplace and sex, by occupation group, Canada, 1931

Birthplace									No.
British Possessions		United States		Europe		Asia			
Males	Females	Males	Females	Males	Females	Males	Females		
20,583	4,467	139,197	22,379	389,763	41,109	49,916	958	1	
1,950	49	66,364	1,466	145,480	3,770	6,587	45	2	
523	-	797	2	2,328	2	1,307	-	3	
120	-	1,473	-	9,423	-	1,238	-	4	
1,562	-	2,105	2	17,576	1	1,870	-	5	
2,533	467	13,523	1,737	39,392	6,360	1,958	119	6	
153	24	919	146	3,011	424	75	3	7	
219	13	1,024	99	6,351	368	530	6	8	
157	286	1,132	1,232	10,009	6,293	374	104	9	
284	18	1,721	63	3,515	83	531	2	10	
161	17	658	71	788	53	69	2	11	
1,444	30	7,149	66	14,250	91	306	2	12	
136	10	890	40	1,468	48	73	-	13	
458	-	1,484	-	2,090	-	118	-	14	
2,301	-	6,209	3	18,435	2	292	-	16	
2,204	70	9,867	633	18,440	123	775	4	16	
723	-	4,357	1	12,214	-	229	-	17	
738	2	629	3	1,033	-	275	-	18	
400	-	3,636	4	4,529	4	259	-	19	
343	68	1,246	625	664	119	12	4	20	
243	44	727	154	1,115	256	117	3	21	
1,569	299	11,421	1,768	24,548	2,229	4,403	144	22	
378	6	1,096	41	1,181	19	67	-	23	
2,535	2,860	10,956	12,699	22,771	25,870	21,767	665	24	
318	2	853	2	447	4	34	-	25	
1,675	646	5,747	5,056	6,944	1,906	347	92	26	
59	7	629	63	741	20	99	27	26	
1,869	2,205	3,727	7,478	15,039	23,946	21,296	473	28	
1,109	607	3,223	3,770	2,197	1,701	367	69	29	
2,938	34	9,312	207	34,490	666	10,406	9	30	

* The totals for "All occupations" include the number in "Unspecified occupations."

* Includes "Laundering, Cleaning, Dyeing, and Pressing."

reporting gainful occupations, of specified birthplace and sex, by occupation group, Canada, 1931

Birthplace								No.
British Possessions		United States		Europe		Asia		
Males	Females	Males	Females	Males	Females	Males	Females	
p.c. 100-00	p.c. 100-00	p.c. 100-00	p.c. 100-00	p.c. 100-00	p.c. 100-00	p.c. 100-00	p.c. 100-00	1
9.50	1.10	47.68	6.52	37.33	9.17	13.20	4.70	2
2.57	-	0.57	0.01	0.65	-	2.62	-	3
0.58	-	1.06	-	2.42	-	2.48	-	4
7.69	-	1.51	0.01	4.51	-	1.14	-	5
12.31	9.11	9.72	7.76	10.11	15.47	3.92	12.42	6
0.74	0.64	0.66	0.65	0.77	1.03	0.15	0.31	7
1.06	0.29	0.74	0.44	1.63	0.90	1.06	0.63	8
0.76	6.60	0.81	5.59	2.57	12.88	0.75	10.86	9
1.29	0.40	1.24	0.28	0.90	0.20	1.06	0.21	10
0.78	0.38	0.49	0.32	0.20	0.13	0.14	0.21	11
7.02	0.67	5.14	0.29	3.66	0.22	0.61	0.21	12
0.66	0.22	0.64	0.18	0.38	0.12	0.15	-	13
2.23	-	1.07	-	0.54	-	0.24	-	14
10.69	-	4.46	0.01	4.73	-	0.58	-	15
10.71	1.57	7.09	2.83	4.73	0.30	1.55	0.42	16
3.51	-	3.13	-	3.13	-	0.46	-	17
3.39	0.04	0.45	0.01	0.27	-	0.65	-	18
1.94	-	2.61	0.02	1.16	0.01	0.32	-	19
1.07	1.52	0.89	2.79	0.17	0.26	0.02	0.42	20
1.18	0.99	0.52	0.69	0.29	0.62	0.23	0.31	21
7.33	6.67	8.20	7.90	6.30	5.45	8.82	15.03	22
1.84	0.11	1.22	0.18	0.30	0.05	0.13	-	23
13.77	64.03	7.87	66.30	6.84	62.93	43.61	68.98	24
1.54	0.04	0.61	0.01	0.11	0.01	0.07	-	25
7.65	14.46	4.13	22.59	1.53	4.62	0.70	9.00	26
0.27	0.16	0.45	0.28	0.10	0.05	0.18	-	27
4.30	49.36	2.68	33.42	4.01	68.25	42.66	49.37	28
6.39	15.60	2.32	16.85	0.56	4.36	0.62	7.20	29
14.27	0.76	6.69	0.92	21.65	1.62	20.85	0.94	30

TABLE 67. Percentage distribution of the population 10 years of age and over reporting

No.	Occupation Group	All Races ¹		Racial Origin					
				British					
				English ²		Irish		Scottish	
		Males	Females	Males	Females	Males	Females	Males	Females
		p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.
1	ALL OCCUPATIONS.....	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
2	Agriculture.....	33.97	3.62	27.91	2.53	36.70	3.76	32.46	3.00
3	Fishing, Hunting, and Trapping.....	1.45	0.07	1.04	0.02	0.62	0.01	0.79	—
4	Logging.....	1.35	—	0.57	—	0.83	—	0.77	—
5	Mining, Quarrying, Oil and Salt Wells	1.80	—	1.48	—	1.40	—	2.60	—
6	Coal Mining.....	0.85	—	0.80	—	0.62	—	1.75	—
7	Other Mining, etc.....	0.95	—	0.68	—	0.78	—	0.85	—
8	Manufacturing.....	10.98	12.71	13.27	11.05	9.60	8.30	11.28	7.93
9	Vegetable Products.....	0.91	1.00	1.01	0.78	0.73	0.52	0.91	0.53
10	Animal Products.....	1.31	1.18	1.19	0.72	0.84	0.50	0.83	0.45
11	Textile Products.....	1.14	8.72	0.91	7.04	0.59	5.52	0.66	5.16
12	Wood Products, Pulp, Paper, and Paper Products; Printing and Publishing.....	2.00	1.00	2.59	1.30	1.89	0.92	2.07	0.83
13	Metal Products.....	5.06	0.55	6.80	0.85	5.05	0.59	6.20	0.66
14	Non-Metallic Mineral Products.....	0.28	0.05	0.35	0.05	0.24	0.04	0.31	0.03
15	Chemical and Allied Products.....	0.13	0.07	0.21	0.08	0.15	0.05	0.16	0.05
16	Miscellaneous Products.....	0.14	0.15	0.21	0.22	0.12	0.14	0.14	0.12
17	Electric Light and Power (including stationary enginesmen).....	0.90	—	1.37	—	1.17	—	1.37	—
18	Building and Construction.....	6.22	0.02	7.28	0.02	5.58	0.02	6.38	—
19	Transportation and Communication	7.62	2.59	9.11	3.38	8.06	3.45	8.62	3.16
20	Railway Transportation.....	2.57	—	2.90	—	3.30	—	3.01	—
21	Water Transportation.....	0.90	0.03	1.09	0.04	0.87	0.03	1.09	0.04
22	Road Transportation.....	2.95	0.01	3.39	—	3.31	0.01	3.00	0.01
23	Other Transportation and Com- munication.....	1.20	2.55	1.77	3.34	1.48	3.41	1.51	3.11
24	Warehousing and Storage.....	0.83	1.23	1.31	1.63	0.93	1.06	1.18	1.15
25	Commercial.....	7.97	8.13	9.15	9.22	8.82	8.68	9.10	8.34
26	Finance, Insurance.....	1.11	0.09	1.53	0.12	1.40	0.12	1.69	0.13
27	Service.....	8.82	52.13	10.11	47.28	9.04	50.03	9.81	51.91
28	Public Administration and Defence	0.96	0.03	1.35	0.03	1.33	0.04	1.30	0.05
29	Professional.....	3.70	17.69	4.83	16.73	4.31	21.86	5.31	21.46
30	Recreational.....	0.23	0.09	0.28	0.12	0.27	0.11	0.24	0.11
31	Personal.....	3.51	33.02	3.47	29.23	2.99	27.14	2.81	29.26
32	Laundering, Cleaning, Dyeing, and Pressing.....	0.42	1.35	0.19	1.16	0.14	0.88	0.15	1.02
33	Clerical.....	3.81	17.56	5.56	23.54	4.80	23.80	5.16	23.97
34	Other (labourers and unskilled workers).....	13.04	1.78	10.25	1.15	10.00	0.73	8.74	0.75
35	Unspecified.....	0.04	0.04	0.06	0.06	0.04	0.04	0.04	0.04

¹ Includes "Other races," viz., Afghan, Armenian, Belgian, Burmese, Eskimo, Greek, Hawaiian, Hindu, Korean, Macedonian, Malay, Negro, Persian, Philippine, Portuguese, Siamese, Spanish, Syrian, Turkish, Other Asiatic, Other European, Other races and not given.

² Less than one one-hundredth of one per cent.

³ Includes Welsh, Manx, Other British.

gainful occupations, of specified racial origin and sex, by occupation group, Canada, 1931

Racial Origin									No.
French		Central European				Dutch			
		German and Austrian		Other†					
Males	Females	Males	Females	Males	Females	Males	Females		
p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	
100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	1
34.00	2.88	55.00	6.72	28.17	6.25	52.48	8.43	8.43	2
1.24	0.02	0.95	0.01	0.39	-	2.11	0.02	0.02	3
2.30	-	0.59	-	1.94	-	0.66	-	-	4
0.98	-	1.27	-	11.24	-	0.74	-	-	5
0.19	-	0.53	-	5.63	-	0.15	-	-	6
0.79	-	0.74	-	5.62	-	0.60	-	-	7
10.80	19.04	18.19	10.79	7.16	8.30	7.58	7.78	7.78	8
1.05	1.68	1.25	1.53	0.50	1.39	0.75	0.43	0.43	9
1.91	2.26	1.40	1.27	1.15	0.95	0.80	0.60	0.60	10
1.31	13.67	0.75	6.71	0.72	5.20	0.40	5.41	5.41	11
1.91	0.89	2.21	0.76	0.79	0.32	1.44	0.66	0.66	12
4.11	0.30	4.16	0.24	3.73	0.32	3.79	0.44	0.44	13
0.32	0.07	0.17	0.03	0.16	-	0.18	-	-	14
0.07	0.08	0.09	0.07	0.05	0.02	0.10	0.09	0.09	15
0.11	0.09	0.17	0.19	0.03	0.10	0.11	0.15	0.15	16
0.70	-	0.63	-	0.45	-	0.83	-	-	17
7.36	0.01	4.39	-	2.62	0.02	5.01	0.06	0.06	18
7.31	1.82	4.70	1.73	3.83	0.22	6.05	2.82	2.82	19
1.80	-	1.74	-	2.90	-	1.85	-	-	20
1.07	0.04	0.49	0.01	0.15	-	0.68	0.03	0.03	21
3.50	0.01	1.96	0.01	0.60	-	2.56	0.03	0.03	22
0.94	1.78	0.59	1.71	0.12	0.22	0.96	2.76	2.76	23
0.44	1.09	0.49	1.05	0.14	0.29	0.48	0.93	0.93	24
6.86	0.78	4.92	5.85	1.27	1.83	6.36	7.48	7.48	25
0.75	0.03	0.53	0.07	0.07	-	0.87	0.09	0.09	26
7.59	56.06	4.89	60.60	2.48	77.80	5.58	50.76	50.76	27
0.86	0.02	0.25	0.01	0.07	-	0.51	0.02	0.02	28
3.15	19.81	2.06	12.34	0.37	2.66	2.85	16.35	16.35	29
0.15	0.05	0.18	0.09	0.11	0.07	0.14	0.11	0.11	30
3.19	34.50	2.31	46.60	1.82	73.38	2.00	39.30	39.30	31
0.22	1.08	0.10	1.58	0.11	1.68	0.08	0.98	0.98	32
3.01	8.63	1.59	12.06	0.27	2.78	1.83	14.39	14.39	33
16.47	3.50	9.64	1.09	39.96	2.49	9.39	1.23	1.23	34
0.04	0.04	0.03	0.01	0.02	-	0.01	0.02	0.02	35

TABLE 67. Percentage distribution of persons 10 years of age and over reporting

No.	Occupation Group	Racial Origin					
		Eastern European ^a		Hebrew		Italian	
		Males	Females	Males	Females	Males	Females
		p.c.	p.c.	p.c.	p.c.	p.c.	p.c.
1	ALL OCCUPATIONS.....	100-00	100-00	100-00	100-00	100-00	100-00
2	Agriculture.....	48-51	10-22	1-60	0-11	6-42	0-80
3	Fishing, Hunting, and Trapping.....	0-34	2	0-06	-	0-22	-
4	Logging.....	2-68	-	0-01	-	0-55	-
5	Mining, Quarrying, Oil and Salt Wells.....	3-68	-	0-05	-	8-03	-
6	Coal Mining.....	1-50	-	1	-	4-24	-
7	Other Mining, etc.....	2-19	-	0-04	-	3-79	-
8	Manufacturing.....	6-39	7-52	28-82	32-29	14-23	29-04
9	Vegetable Products.....	0-50	1-10	1-02	0-77	1-26	3-82
10	Animal Products.....	0-97	0-52	4-07	1-80	2-58	1-44
11	Textile Products.....	0-60	4-98	18-24	28-45	2-65	20-88
12	Wood Products, Pulp, Paper, and Paper Products; Printing and Publishing.....	0-80	0-34	2-17	0-81	1-24	1-31
13	Metal Products.....	3-29	0-36	2-10	0-14	5-39	1-12
14	Non-Metallic Mineral Products.....	0-12	0-04	0-17	0-01	0-84	0-19
15	Chemical and Allied Products.....	0-05	0-02	0-06	0-03	0-15	-
16	Miscellaneous Products.....	0-06	0-07	0-39	0-28	0-13	0-27
17	Electric Light and Power (including stationary engineers).....	0-44	-	0-06	-	1-10	-
18	Building and Construction.....	2-94	0-01	4-17	0-01	7-25	0-03
19	Transportation and Communication..	5-39	0-32	3-56	0-44	8-03	1-04
20	Railway Transportation.....	3-94	-	0-19	-	3-88	-
21	Water Transportation.....	0-17	2	0-07	0-01	0-38	-
22	Road Transportation.....	1-05	0-01	2-21	-	3-12	-
23	Other Transportation and Communication.....	0-23	0-31	1-08	0-43	0-65	1-04
24	Warehousing and Storage.....	0-20	0-91	1-25	1-07	0-54	2-89
25	Commercial.....	1-98	3-02	40-36	21-27	8-66	15-88
26	Finance, Insurance.....	0-11	0-02	1-78	0-07	0-27	0-06
27	Service.....	3-60	72-65	11-25	12-54	8-33	34-47
28	Public Administration and Defence	0-06	-	0-13	0-01	0-20	0-03
29	Professional.....	0-81	4-12	5-23	4-46	1-27	4-84
30	Recreational.....	0-17	0-07	0-59	0-10	0-46	0-13
31	Personal.....	2-38	65-94	2-25	7-37	5-59	24-39
32	Laundrying, Cleaning, Dyeing and Pressing.....	0-17	2-52	3-04	0-51	0-81	5-08
33	Clerical.....	0-39	3-38	3-86	31-00	1-30	10-43
34	Other (labourers and unskilled workers)	23-35	1-92	3-13	1-14	35-02	6-29
35	Unspecified.....	0-02	0-02	0-05	0-06	0-05	0-11

^a Includes Albanian, Bosnian, Bohemian, Croatian, Czech, Dalmatian, Herzegovinian, Hungarian, Magyar, Montenegrin, Serbian, Slovak, Slovenian and Yugoslavie.

^b Includes Bukovinian, Finnish, Galician, Lithuanian, Polish, Roumanian, Russian, Rusnak, Ruthenian and Ukrainian.

^c Includes Danish, Icelandic, Norwegian and Swedish.

gainful occupations, of specified racial origin and sex, by occupation group, Canada, 1931—Con.

Racial Origin								No.
Scandinavian*		Chinese		Japanese		Indian		
Males	Females	Males	Females	Males	Females	Males	Females	
p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	
100-00	100-00	100-00	100-00	100-00	100-00	100-00	100-00	1
53-89	8-55	11-77	3-95	19-42	7-05	29-08	14-24	2
2-52	0-01	0-03	-	18-28	-	45-11	13-51	3
4-18	-	1-64	-	7-23	-	3-72	-	4
2-43	0-01	1-01	-	1-80	-	0-35	-	5
0-36	-	0-80	-	1-34	-	0-08	-	6
2-07	0-01	0-21	-	0-47	-	0-27	-	7
5-87	3-77	2-63	3-95	8-23	14-24	2-96	27-23	8
0-38	0-21	0-08	-	0-30	0-44	0-06	0-23	9
0-80	0-23	1-09	0-40	0-88	0-88	0-45	15-83	10
0-18	2-87	0-71	3-58	0-70	12-92	0-01	3-21	11
1-12	0-32	0-51	-	4-85	-	1-28	7-75	12
3-36	0-12	0-15	-	1-06	-	1-00	-	13
0-13	-	0-05	-	0-05	-	0-03	0-13	14
0-08	-	0-03	-	0-24	-	-	-	15
0-05	0-03	-	-	0-06	-	0-00	0-07	16
0-76	-	0-11	-	0-84	-	0-11	-	17
6-47	-	0-11	-	2-37	-	0-93	-	18
4-71	2-23	1-40	0-40	3-47	0-44	2-19	0-13	19
2-02	-	0-34	-	0-94	-	0-60	-	20
0-70	0-02	0-59	-	1-30	-	0-66	0-03	21
1-47	0-01	0-44	-	1-23	-	0-85	-	22
0-52	2-20	0-02	0-40	-	0-44	0-07	0-10	23
0-35	0-61	0-24	-	0-20	0-15	0-03	0-10	24
3-53	6-03	0-70	20-55	7-61	9-09	0-72	1-59	25
0-33	0-04	0-05	-	0-25	-	0-01	-	26
3-96	67-52	52-33	61-28	10-97	65-04	0-84	40-58	27
0-21	0-04	0-03	-	0-06	-	0-06	-	28
1-60	14-81	0-28	6-72	1-05	3-96	0-29	1-52	29
0-14	0-07	0-07	-	0-25	0-15	0-03	0-03	30
1-95	51-41	36-08	49-80	8-72	59-77	0-44	36-40	31
0-06	1-20	15-87	4-74	0-89	1-76	0-02	2-62	32
1-12	10-85	0-44	7-51	1-17	2-05	0-11	0-89	33
0-92	0-36	21-51	1-58	18-32	0-73	13-84	1-72	34
0-02	0-02	-	0-79	0-02	-	-	0-03	35

TABLE 68. Percentage distribution of the population 10 years of age and over reporting

No.	Racial Origin	All Occupations		Occupation Group			
				Agriculture		Fishing, Hunting, and Trapping	
		Males	Females	Males	Females	Males	Females
		p.c.	p.c.	p.c.	p.c.	p.c.	p.c.
1	ALL RACES	100-00	100-00	100-00	100-00	100-00	100-00
2	British.....	53-04	57-23	48-48	49-02	32-22	8-25
3	English ¹	27-60	29-09	22-73	20-29	19-80	5-84
4	Irish.....	11-99	13-51	12-95	14-05	5-10	1-61
5	Scottish.....	13-39	14-77	12-80	14-71	7-32	0-80
6	French.....	24-80	27-44	24-89	21-85	21-23	7-04
7	Central European.....	6-48	4-71	9-46	8-67	3-74	0-60
8	German and Austrian.....	5-15	4-09	8-36	7-60	3-38	0-60
9	Other ²	1-33	0-61	1-10	1-00	0-36	-
10	Dutch.....	1-43	0-98	2-20	2-23	2-07	0-20
11	Eastern European ³	5-70	3-92	8-14	11-07	1-32	0-20
12	Hebrew.....	1-46	2-16	0-07	0-07	0-06	-
13	Italian.....	0-97	0-56	0-18	0-12	0-15	-
14	Scandinavian ⁴	2-75	1-68	4-37	3-97	4-77	0-20
15	Chinese.....	1-23	0-04	0-42	0-04	0-04	-
16	Japanese.....	0-29	0-10	0-15	0-20	3-23	-
17	Indian.....	0-97	0-45	0-83	1-79	30-02	82-09

TABLE 68. Percentage distribution of the population 10 years of age and over reporting

No.	Racial Origin	Occupation Group					
		Transportation and Communication		Commercial		Finance, Insurance	
		Males	Females	Males	Females	Males	Females
		p.c.	p.c.	p.c.	p.c.	p.c.	p.c.
1	ALL RACES	100-00	100-00	100-00	100-00	100-00	100-00
2	British.....	62-29	73-36	60-35	62-48	74-51	83-91
3	English.....	33-07	37-92	31-76	32-89	35-10	41-86
4	Irish.....	14-09	18-02	13-28	14-43	16-10	10-59
5	Scottish.....	15-14	18-02	15-31	15-16	20-31	21-59
6	French.....	23-79	19-31	21-35	22-91	17-47	8-76
7	Central European.....	3-91	2-79	3-39	3-08	2-56	3-33
8	German and Austrian.....	3-24	2-73	3-15	2-95	2-43	3-33
9	Other ²	0-67	0-05	0-21	0-14	0-03	-
10	Dutch.....	1-13	1-07	1-14	0-90	1-11	1-05
11	Eastern European ³	4-03	0-49	1-42	1-43	0-55	0-70
12	Hebrew.....	0-68	0-37	7-39	5-65	2-34	1-75
13	Italian.....	1-03	0-23	1-06	1-10	0-23	0-35
14	Scandinavian ⁴	1-70	1-44	1-22	1-24	0-81	0-88
15	Chinese.....	0-25	0-01	1-03	0-10	0-05	-
16	Japanese.....	0-12	0-02	0-25	0-12	0-03	-
17	Indian.....	0-28	0-02	0-09	0-09	0-01	-

¹ Labourers and unskilled workers (not agricultural, mining or logging).² See footnote 3, Table 66.³ See footnote 4, Table 66.⁴ See footnote 5, Table 66.⁵ See footnote 6, Table 66.

NOTE.—The percentage distribution in this table does not total 100 because "Other races" is not included.

gainful occupations, of specified occupation group and sex, by racial origin, Canada, 1931

Occupation Group								No.
Logging		Mining, Quarrying, Oil and Salt Wells		Manufacturing		Construction		
Males	Females	Males	Females	Males	Females	Males	Females	
p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	
100-00	-	100-00	100-00	100-00	100-00	100-00	100-00	1
26-66	-	51-58	83-32	57-68	43-23	56-83	72-92	2
11-62	-	22-86	33-33	33-43	25-20	32-36	45-83	3
7-38	-	9-37	16-67	10-48	8-82	10-74	14-55	4
7-55	-	19-35	33-33	13-76	0-21	13-73	12-50	5
42-31	-	13-50	-	24-41	41-09	29-35	13-54	6
4-16	-	11-95	-	5-65	3-88	4-20	3-12	7
2-25	-	3-66	-	4-78	3-48	3-64	2-08	8
1-91	-	8-29	-	0-86	0-40	0-56	1-04	9
0-70	-	0-59	-	0-99	0-60	1-15	4-17	10
11-31	-	11-70	-	3-32	2-32	2-69	3-12	11
0-01	-	0-04	-	3-83	5-48	0-98	1-04	12
0-40	-	4-36	-	1-26	1-28	1-14	1-04	13
8-53	-	3-72	16-67	1-47	0-50	2-86	-	14
1-49	-	0-69	-	0-29	0-01	0-02	-	15
1-38	-	0-36	-	0-19	0-11	0-10	-	16
2-67	-	0-19	-	0-26	0-07	0-15	-	17

gainful occupations, of specified occupation group and sex, by racial origin, Canada, 1931—Con.

Occupation Group								No.
Service				Clerical		Labourers ^a		
Professional		Personal		Males	Females	Males	Females	
Males	Females	Males	Females					
p.c.	p.c.	p.c.	p.c.					
100-00	100-00	100-00	100-00	100-00	100-00	100-00	100-00	1
69-22	62-04	48-25	49-87	73-67	76-51	39-89	30-83	2
36-07	27-42	27-36	25-67	40-37	38-38	21-73	18-91	3
13-95	16-69	10-19	11-10	15-12	18-31	9-19	5-58	4
19-21	17-92	10-71	13-09	18-17	19-32	8-07	6-34	5
21-12	30-73	22-54	28-67	19-62	13-49	31-32	56-26	6
3-00	2-95	4-07	7-14	2-25	2-91	7-87	3-42	7
2-87	2-85	3-38	5-78	2-16	2-81	3-91	2-55	8
0-13	0-09	0-69	1-37	0-09	0-10	4-06	0-87	9
1-10	0-91	0-81	1-17	0-59	0-80	1-63	0-68	10
1-25	0-91	3-87	7-82	0-88	0-75	10-21	4-28	11
2-06	0-54	0-94	0-48	1-48	3-91	0-35	1-40	12
0-33	0-15	1-55	0-41	0-33	0-33	2-62	1-69	13
1-19	1-40	1-53	2-61	0-81	1-04	2-05	0-34	14
0-09	0-01	12-60	0-06	0-14	0-02	2-62	0-03	15
0-07	0-02	0-64	0-19	0-08	0-01	0-36	0-04	16
0-08	0-04	0-12	0-50	0-03	0-02	1-03	0-44	17

TABLE 69. Immigrants reporting gainful occupations, wage-earners, and wage-earners as percentage of immigrants reporting gainful occupations, by racial origin and sex, Canada, 1931

Racial Origin	Immigrants					
	Males			Females		
	Reporting Gainful Occupations	Wage-Earners	Wage-Earners as P.C. of Immigrants Reporting Gainful Occupations	Reporting Gainful Occupations	Wage-Earners	Wage-Earners as P.C. of Immigrants Reporting Gainful Occupations
ALL RACES	1,132,264	781,372	69.91	164,481	123,295	81.94
British	614,957	468,959	76.26	199,348	94,094	86.95
English.....	377,585	288,147	76.31	61,321	52,245	85.20
Irish.....	78,917	58,685	74.36	15,990	13,356	83.53
Scottish.....	144,996	112,208	77.39	30,359	27,092	89.24
Other.....	13,459	9,910	73.63	1,678	1,401	83.49
French	30,143	18,041	59.85	7,153	4,249	59.40
Central European	122,209	72,544	59.36	12,187	8,211	67.38
German and Austrian.....	82,010	39,166	47.70	8,834	6,544	74.08
Other.....	40,199	33,378	83.06	3,353	1,667	49.72
Dutch	13,547	6,380	47.10	1,361	.993	72.96
Eastern European	145,497	90,382	62.12	15,715	11,245	71.56
Polish.....	42,685	30,701	71.91	4,647	3,360	72.30
Russian.....	20,954	10,680	50.47	1,958	1,489	76.05
Ukrainian.....	52,854	27,362	51.77	3,895	2,157	55.34
Other.....	29,954	21,739	75.00	5,214	4,239	81.33
Hebrew	37,282	20,478	54.93	8,197	7,098	86.59
Italian	26,040	21,235	81.55	1,381	913	66.11
Scandinavian	73,778	37,727	51.14	5,479	4,758	73.54
Chinese	39,218	28,148	71.77	118	65	55.08
Japanese	7,458	4,834	64.82	414	207	50.00
Indian	809	159	20.89	45	17	35.42
Other	21,353	12,484	58.52	2,089	1,445	69.17

TABLE 70. Total wage-earners and weeks lost and average number of weeks lost per wage-earner, by broad nativity group and sex, Canada and provinces, June 1, 1930-June 1, 1931

Province	Total			Immigrants			Canadian Born		
	Total Wage-Earners	Total Weeks Lost	Average Weeks Lost per Wage-Earner (Col. 2 ÷ Col. 1)	Total Wage-Earners	Total Weeks Lost	Average Weeks Lost per Wage-Earner (Col. 5 ÷ Col. 4)	Total Wage-Earners (Col. 1 - Col. 4)	Total Weeks Lost (Col. 2 - Col. 5)	Average Weeks Lost per Wage-Earner (Col. 8 ÷ Col. 7)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
MALES									
CANADA	2,022,269	21,697,109	10.68	781,372	9,269,514	11.85	1,240,888	12,426,595	9.95
Prince Edward Island.....	9,159	45,005	4.91	547	1,695	3.10	8,612	43,310	5.03
Nova Scotia.....	95,244	1,079,441	11.33	14,564	204,045	14.01	80,700	875,396	10.85
New Brunswick.....	56,310	719,112	10.84	5,943	49,394	8.31	50,357	669,718	11.09
Quebec.....	535,203	5,320,289	9.94	97,679	985,088	10.05	437,524	4,335,201	9.92
Ontario.....	759,851	7,702,371	10.25	315,525	3,539,578	11.33	437,326	4,162,793	9.29
Manitoba.....	132,883	1,531,835	11.53	75,763	924,232	12.33	57,120	597,593	10.46
Saskatchewan.....	116,159	1,184,325	10.20	65,426	690,368	10.55	50,731	493,957	9.74
Alberta.....	116,005	1,301,118	11.22	75,177	897,017	11.93	40,828	404,101	9.90
British Columbia.....	198,448	2,723,623	13.72	130,448	1,859,097	14.25	68,000	864,526	12.71
FEMALES									
CANADA	547,537	2,899,171	5.29	133,295	711,921	5.34	414,542	2,187,250	5.28
Prince Edward Island.....	3,185	8,763	2.75	109	244	2.24	3,076	8,519	2.77
Nova Scotia.....	22,537	91,841	4.08	1,940	7,125	3.67	20,597	84,716	4.11
New Brunswick.....	17,922	84,723	4.73	1,083	4,405	4.07	16,839	80,318	4.77
Quebec.....	161,136	824,273	5.12	21,582	90,218	4.18	139,554	734,055	5.26
Ontario.....	212,756	1,113,409	5.23	59,685	340,038	5.70	153,071	773,431	5.05
Manitoba.....	37,855	235,550	6.22	12,474	71,419	5.73	25,382	164,131	6.47
Saskatchewan.....	29,411	183,997	5.58	10,065	51,477	5.11	19,346	112,520	5.82
Alberta.....	26,416	147,810	5.59	11,382	62,141	5.46	15,034	85,669	5.70
British Columbia.....	36,018	228,745	6.35	14,975	84,854	5.67	21,043	143,891	6.85

TABLE 71. Average number of weeks lost per immigrant male wage-earner, by racial origin, Canada and provinces, June 1, 1930-June 1, 1931

Racial Origin	Average Weeks Lost per Immigrant Male Wage-Earner in									
	Canada	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	British Columbia
ALL RACES	11-85	3-10	14-01	8-31	10-06	11-53	12-33	10-55	11-03	14-25
British.....	9-00	3-40	12-28	7-37	6-01	9-11	8-00	7-75	9-30	11-74
English.....	8-89	3-19	11-83	7-13	5-73	9-06	7-77	7-35	8-98	11-41
Irish.....	9-73	4-64	14-65	9-34	7-30	9-07	9-30	9-24	10-27	13-25
Scottish.....	9-19	3-12	11-64	6-88	6-05	9-20	7-78	7-97	9-41	11-77
Other.....	10-07	4-00	13-80	9-49	5-41	9-15	8-36	7-11	11-87	13-03
French.....	10-50	3-68	16-16	12-30	9-68	11-42	10-39	10-90	10-28	14-07
Central European.....	17-47	1-52	19-11	11-00	20-86	18-35	17-08	13-02	16-47	18-88
German and Austrian.....	13-39	2-05	17-54	9-52	10-65	13-41	15-30	11-89	12-69	17-16
Other.....	22-28	-	19-82	16-94	25-30	21-88	24-26	17-36	22-16	21-19
Dutch.....	10-37	1-78	7-17	10-70	5-49	8-92	10-17	11-15	10-55	14-77
Eastern European.....	10-63	-	22-23	14-52	19-52	20-29	21-03	16-64	17-01	21-45
Polish.....	10-68	-	21-60	12-48	20-62	20-62	20-84	15-08	16-85	20-87
Russian.....	17-19	-	17-25	16-27	15-23	19-53	18-24	12-90	15-37	19-64
Ukrainian.....	20-12	-	28-07	8-67	19-07	20-83	21-68	18-87	16-88	19-77
Other.....	20-14	-	16-50	15-72	19-64	19-80	19-07	17-54	19-61	23-62
Hebrew.....	11-01	-	5-81	5-71	9-70	12-05	10-72	6-24	7-13	9-73
Italian.....	15-45	-	20-53	13-77	14-42	16-14	10-59	8-87	16-63	14-69
Scandinavian.....	14-21	2-13	7-09	9-58	7-78	12-13	16-18	10-54	12-06	19-26
Chinese.....	14-17	2-80	3-03	3-00	4-15	6-33	14-83	7-34	10-80	17-50
Japanese.....	10-02	-	-	-	1-63	2-58	0-20	1-07	15-92	10-19
Indian.....	15-11	-	16-40	11-60	21-95	11-88	17-82	11-65	13-28	14-37
Other.....	12-72	4-60	22-26	13-29	8-81	12-78	13-34	9-28	13-18	16-01

TABLE 72. Data used in correlation between loss of employment and related factors, by nativity and provinces, Canada, June 1, 1930-June 1, 1931

Nativity	X ₁	X ₂	X ₃	X ₄	X ₅
Prince Edward Island—					
British born.....	63	9-2	105	105	105
United States born.....	97	19-4	122	106	98
European born.....	43	2-0	78	138	117
Nova Scotia—					
British born.....	116	18-8	138	113	117
United States born.....	81	21-9	92	112	107
European born.....	167	11-0	184	126	125
Asiatic born.....	63	19-2	48	121	127
New Brunswick—					
British born.....	65	16-9	89	107	112
United States born.....	91	20-6	97	100	106
European born.....	104	11-0	102	114	121
Asiatic born.....	44	17-3	64	112	127
Quebec—					
British born.....	62	16-1	105	112	117
United States born.....	82	21-0	102	114	114
European born.....	158	7-6	150	121	122
Asiatic born.....	48	17-1	55	119	124
Ontario—					
British born.....	90	16-3	115	111	113
United States born.....	81	18-2	98	105	106
European born.....	175	7-0	150	121	119
Asiatic born.....	68	17-5	63	118	122
Manitoba—					
British born.....	69	19-6	105	114	118
United States born.....	79	20-2	81	114	114
European born.....	159	13-1	125	118	118
Asiatic born.....	127	18-6	71	120	124
Saskatchewan—					
British born.....	74	17-4	111	110	118
United States born.....	95	20-2	80	118	117
European born.....	139	5-6	111	117	118
Asiatic born.....	73	17-2	85	117	125

TABLE 72. Data used in correlation between loss of employment and related factors, by nativity and provinces, Canada, June 1, 1930-June 1, 1931—Con.

Nativity	X ₁	X ₂	X ₃	X ₄	X ₅
Alberta—					
British born.....	83	17.5	121	112	115
United States born.....	88	20.4	76	114	114
European born.....	145	5.3	113	120	117
Asiatic born.....	99	18.8	86	117	122
British Columbia—					
British born.....	85	20.7	93	109	111
United States born.....	95	21.1	91	105	106
European born.....	140	9.0	124	116	115
Asiatic born.....	117	20.7	112	114	118
Average.....	96	15.8	101	115	116

X₁—average number of weeks lost per male wage-earner of specified nativity as a percentage of the average number of weeks lost per male wage-earner in the total population of the province of residence.

X₂—median length of Canadian residence for wage-earners of specified nativities in the different provinces.

X₃—index of occupational distribution of wage-earners of the several nativities from the standpoint of risk of unemployment as compared with that of the "occupied" male population in the province of residence.

X₄—index of age distribution of males 10 years of age and over of the several nativities from the standpoint of liability to loss of time on the part of the wage-earning classes of the nativity as compared with that of the male population 10 years of age and over in the province of residence.

X₅—index of age distribution of males 10 years of age and over of the several nativities from the standpoint of liability to having a gainful occupation (and hence being subject to unemployment) as compared with that of the male population 10 years of age and over of the province of residence.

TABLE 73. Mean number of births, 1930-1932 and fertility rates in terms of all women 15-44 years of age, by racial origin, Canada, 1931

Racial Origin	All Women 15-44 Years (1931)	Mean Annual Births (1930-1932)	Births per 100 Women 15-44 Years	Index Based on Total=100
ALL RACES.....	2,303,919	239,878	10.4	100
British.....	1,216,045	97,447	8.0	77
English.....	632,460	32,909	8.4	81
Irish.....	268,040	20,831	7.8	75
Scottish.....	302,243	22,824	7.6	73
Other.....	13,302	793	6.0	58
European.....	1,049,722	135,232	12.9	124
French.....	651,122	93,394	14.3	138
Foreign European.....	398,600	41,888	10.5	101
Austrian, n.o.s. ¹	10,732	1,064	9.0	85
Belgian.....	6,332	611	9.0	82
Czech and Slovak.....	5,505	819	14.0	143
Danish.....	6,816	602	9.7	93
Dutch.....	30,250	2,395	7.9	76
Finnish.....	11,946	876	7.3	70
German.....	104,122	12,191	11.7	113
Hebrew.....	43,826	2,156	4.9	47
Hungarian.....	8,394	1,305	15.7	151
Icelandic.....	4,493	397	8.8	85
Italian.....	19,324	2,247	11.6	112
Norwegian.....	18,938	1,075	10.4	100
Polish.....	32,643	3,723	11.4	110
Roumanian.....	5,633	571	10.1	97
Russian.....	18,874	1,765	9.4	90
Swedish.....	16,077	1,453	9.0	87
Ukrainian ²	47,853	6,748	14.1	136
Yugoslavian.....	2,346	497	21.2	204
Other.....	4,586	433 ³	-	-
Asiatic.....	8,747	1,325	15.2	146
Chinese.....	1,409	225	16.0	154
Japanese.....	4,380	804	18.0	179
Other.....	3,008	296 ⁴	-	-
Indian.....	23,007	3,406	14.8	142
Negro.....	4,120	401	9.7	93
Various.....	450	279	-	-
Unspecified.....	1,929	1,738	-	-

n.o.s.—not otherwise specified.

¹ Including illegitimate births.

² Includes Bulgarian, Greek and Swiss.

³ Includes Armenian, Hindu and Syrian.

⁴ Galician included with Ukrainian in census and vital statistics.

TABLE 74. Mean number of births, 1930-1932 and fertility rates in terms of married women 15-44 years of age, by racial origin, Canada, 1931

Racial Origin	Married Women 15-44 Years (1931)	Mean Annual Births ¹ (1930-1932)	Births per 100 Married Women 15-44 Years	Index Based on Total=100
ALL RACES	1,237,870	231,581	18.9	100
British	657,105	93,824	14.3	76
English.....	357,544	51,022	14.3	76
Irish.....	134,839	20,088	14.9	79
Scottish.....	107,470	21,960	13.9	74
Other.....	7,252	764	10.5	56
European	546,917	132,167	24.2	128
French.....	312,233	91,486	29.3	155
Foreign European.....	234,684	40,681	17.3	92
Austrian, n.o.s.....	5,653	1,033	18.5	97
Belgian.....	4,244	599	14.1	75
Czech and Slovak.....	3,913	801	20.5	108
Dutch.....	16,985	2,331	13.7	72
Finnish.....	6,744	827	12.3	65
German.....	59,228	11,847	20.0	106
Hebrew.....	22,180	2,141	9.7	51
Hungarian.....	6,186	1,271	20.8	108
Italian.....	11,717	2,216	18.9	100
Polish.....	20,488	3,677	17.5	93
Roumanian.....	3,737	540	14.7	78
Russian.....	11,226	1,721	15.3	81
Scandinavian.....	26,689	4,329	16.2	86
Ukrainian ²	29,997	6,523	21.7	115
Other.....	4,694	916	-	-
Asiatic	5,918	1,316	22.2	118
Chinese.....	223	223	24.0	127
Japanese.....	4,283	803	-	-
Other.....	1,636	290	-	-
Indian and Eskimo	14,745	3,042	20.6	109
Unspecified and others.....	3,191	1,232	38.8	204

n.o.s.—not otherwise specified.

¹ Does not include illegitimate births.² Includes 1,904 Norwegian, 1,397 Swedish, 644 Danish and 384 Icelandic.³ Includes 31 Bulgarian, 160 Greek, 234 Swiss and 491 Yugoslavie.⁴ Includes Armenian, Hindu and Syrian.⁵ Includes 338 Negro.⁶ Galician included with Ukrainian in census and vital statistics.

TABLE 75. Data used in correlation between infant mortality, fertility, illiteracy and percentage urban, Canada, 1931

Racial Origin	X ₁	X ₂	X ₃	X ₄
English.....	6.6	14.3	0.8	59
Irish.....	5.9	14.9	1.1	55
Scottish.....	5.3	13.9	0.8	57
Other British.....	5.0	10.5	0.4	58
French.....	11.4	29.3	6.2	54
Austrian, n.o.s.....	11.0	15.5	10.5	38
Belgian.....	5.0	14.1	3.4	37
Czech and Slovak.....	7.9	20.5	8.6	53
Dutch.....	5.5	13.7	2.0	34
Finnish.....	6.8	12.3	6.0	40
German.....	6.2	20.0	2.0	37
Hebrew.....	4.7	9.7	3.8	97
Hungarian.....	9.8	20.5	8.9	49
Italian.....	6.8	18.9	9.1	81
Polish.....	9.4	17.5	11.8	47
Roumanian.....	8.9	14.7	12.0	45
Russian.....	7.2	15.3	13.1	27
Scandinavian.....	5.2	14.8	1.1	32
Ukrainian.....	8.9	21.7	13.9	30
Average.....	7.3	16.4	6.3	49

X₁ = infant mortality rate, 1931.X₂ = mean births 1930-32 per 100 married women (15-44) in 1931.X₃ = percentage of race illiterate.X₄ = percentage of race urban.

TABLE 76. Data used in correlation between fertility and related factors, for selected provinces and racial origins, Canada, 1931

Racial Origin	X ₁	X ₂	X ₃	X ₄	X ₅	X ₆
Ontario—						
English.....	14.0	100	57	75	66.4	0.7
Irish.....	14.7	101	51	90	69.1	1.0
Scottish.....	14.1	101	53	79	68.7	0.6
Austrian.....	10.7	103	68	43	54.4	13.6
Belgian.....	12.6	107	80	29	60.8	4.1
Czech and Slovak.....	24.8	125	80	29	66.4	12.3
Dutch.....	10.1	99	57	93	60.8	1.3
Finnish.....	11.8	106	57	29	72.2	7.5
German.....	15.1	101	55	90	66.1	1.8
Hebrew.....	10.7	99	52	46	58.9	4.2
Hungarian.....	18.8	114	81	19	58.1	9.8
Italian.....	19.5	94	63	56	42.4	10.2
Polish.....	17.3	102	61	49	52.9	12.8
Romanian.....	12.4	98	72	41	46.9	12.2
Russian.....	17.3	98	62	39	44.3	12.1
Scandinavian.....	15.2	105	60	58	50.5	1.4
Ukrainian.....	18.3	101	71	43	47.6	10.4
Manitoba—						
English.....	12.9	97	53	65	64.7	0.5
Irish.....	12.9	99	50	84	66.1	0.4
Scottish.....	13.0	97	50	73	66.2	0.5
Austrian.....	14.5	97	67	62	56.3	12.2
Belgian.....	17.3	106	64	56	50.2	3.9
Czech and Slovak.....	19.3	104	59	35	69.4	8.7
Dutch.....	16.0	101	53	77	60.4	2.3
Finnish.....	13.8	115	52	39	73.9	3.5
German.....	28.4	102	55	63	58.0	3.5
Hebrew.....	11.1	100	45	45	51.0	3.4
Hungarian.....	16.9	105	70	27	57.8	4.8
Italian.....	15.4	95	50	56	46.0	7.3
Polish.....	15.2	99	55	55	58.3	12.5
Romanian.....	13.8	96	50	45	45.2	15.3
Russian.....	26.3	99	51	59	53.9	7.6
Scandinavian.....	16.2	102	52	62	67.7	1.2
Ukrainian.....	19.2	93	59	59	50.2	15.3
Saskatchewan—						
English.....	14.4	95	59	59	58.5	0.4
Irish.....	15.1	98	56	91	58.9	0.5
Scottish.....	14.9	93	56	80	58.0	0.5
Austrian.....	16.8	98	61	64	53.5	9.9
Belgian.....	18.3	102	58	52	61.5	3.1
Czech and Slovak.....	21.8	105	64	55	63.2	6.1
Dutch.....	22.0	98	56	83	53.2	1.9
Finnish.....	19.0	102	54	63	68.1	2.0
German.....	20.5	99	57	72	53.7	3.4
Hebrew.....	7.5	104	48	61	56.5	2.5
Hungarian.....	23.3	103	66	51	54.6	7.0
Italian.....	18.0	97	60	59	47.3	3.9
Polish.....	17.9	104	63	52	61.8	11.7
Romanian.....	17.1	97	62	62	46.4	14.0
Russian.....	13.3	95	59	64	50.0	12.5
Scandinavian.....	17.5	97	57	69	57.3	1.0
Ukrainian.....	25.0	97	61	62	46.6	15.0
Alberta—						
English.....	14.4	97	60	66	61.3	0.3
Irish.....	14.4	97	56	86	59.8	0.4
Scottish.....	14.3	96	57	74	60.6	0.4
Austrian.....	26.9	101	64	57	49.5	7.9
Belgian.....	16.0	106	65	46	56.2	2.7
Czech and Slovak.....	16.2	109	48	40	53.9	6.2
Dutch.....	15.1	97	59	74	55.5	0.9
Finnish.....	15.3	105	55	54	72.8	3.9
German.....	23.1	101	61	71	55.3	2.3
Hebrew.....	11.2	103	58	46	57.5	1.8
Hungarian.....	24.2	113	80	21	56.0	9.0
Italian.....	14.4	96	62	40	47.6	4.4
Polish.....	22.5	109	68	44	56.2	10.3
Romanian.....	21.0	97	65	58	41.8	12.6
Russian.....	17.2	99	63	58	53.1	8.1
Scandinavian.....	17.3	100	60	63	50.3	0.9
Ukrainian.....	24.1	101	65	58	46.1	13.0
British Columbia—						
English.....	11.4	96	57	57	67.3	0.3
Irish.....	9.8	98	54	77	65.0	0.4
Scottish.....	10.0	98	53	64	60.5	0.3
Austrian.....	12.2	104	50	45	59.5	7.2
Belgian.....	7.4	98	68	48	66.8	4.3
Czech and Slovak.....	13.7	101	65	42	55.9	6.9
Dutch.....	13.9	97	61	70	61.5	2.9
Finnish.....	11.8	111	63	29	72.3	6.4
German.....	12.8	102	61	65	66.6	1.5

TABLE 76. Data used in correlation between fertility and related factors, for selected provinces and racial origins, Canada, 1931—Con.

Racial Origin	X ₁	X ₂	X ₃	X ₄	X ₅	X ₆
British Columbia—Con.						
Hebrew.....	7.3	100	55	51	61.8	2.3
Hungarian.....	18.1	112	79	24	62.6	9.4
Italian.....	15.4	98	62	50	48.9	6.8
Polish.....	14.4	108	66	41	58.7	8.7
Roumanian.....	11.1	102	72	47	45.9	10.3
Scandinavian.....	13.3	102	61	41	62.2	1.5
Ukrainian.....	22.0	106	69	48	53.3	7.3
N=84 Average mean.....	16.2	101	61	56	58.0	5.7

X₁=crude index of fertility on basis of married females 15-44 years.X₂=index of degree to which age distribution of all women 15-44 is more or less favourable.X₃=percentage of women 15-44 married.X₄=percentage of race North American-born (Canada and U.S.A.).X₅=percentage of females 20 years and over urban.X₆=percentage of race 10 years and over illiterate.**TABLE 77. Number of deaths of infants under 1 year of age, expressed as a percentage of total births (including illegitimate), by racial origin, Canada, 1931¹**

Racial Origin	(1) Total Births (including illegitimate)	(2) Deaths of Children Under 1 Year	(3) Infant Mortality Rate (per 100)(Col. 2÷ Col. 1)
	No.	No.	p.c.
ALL RACES.....	240,073	20,360	8.47
Indian.....	3,164	532	16.81
Hindu.....	50	0	12.00
Negro.....	401	40	11.47
French.....	92,332	10,512	11.39
Austrian.....	1,009	111	11.00
Yugoslavia.....	529	56	10.30
Argentinian.....	5	0	9.84
Ukrainian.....	1,288	126	9.78
Not specified.....	1,790	170	9.50
Polish.....	3,600	338	9.39
Roumanian.....	618	55	8.90
Ukrainian.....	6,544	582	8.89
Czech and Slovak.....	855	69	7.89
Greek.....	236	18	7.63
Chinese.....	272	20	7.36
Russian.....	1,923	139	7.23
Other.....	319	22	6.90
Italian.....	2,639	184	6.83
Finnish.....	784	53	6.76
Icelandic.....	407	27	6.63
Syrian.....	246	16	6.50
English.....	51,766	3,358	6.49
German.....	11,729	727	6.20
Japanese.....	1,643	50	5.93
Irish.....	22,487	1,331	5.92
Belgian.....	681	38	5.58
Dutch.....	2,617	145	5.54
Danish.....	775	42	5.42
Scottish.....	23,388	1,245	5.32
Swedish.....	1,588	81	5.10
Welsh.....	1,001	50	5.00
Norwegian.....	1,895	93	4.91
Hebrew.....	2,174	103	4.74
Swiss.....	328	8	2.44
Bulgarian.....	60	1	1.67

¹ The denominator for a given origin includes fathers of that origin for legitimate births and mothers for illegitimate births. The racial origin of father is not tabulated for births to unmarried mothers.

TABLE 78. Deaf-mutes and rates per 100,000 population, by birthplace, Canada,¹ 1931

Birthplace	Total Population	Total Deaf-Mutes	Rates per 100,000
TOTAL	10,367,833¹	6,767²	65.4
Prince Edward Island.....	99,714	58	58.2
Nova Scotia.....	507,128	420	82.8
New Brunswick.....	402,985	360	89.3
Quebec.....	2,695,070	2,650	98.3
Ontario.....	2,794,294	1,653	59.2
Manitoba.....	463,404	307	66.2
Saskatchewan.....	502,127	248	49.5
Alberta.....	336,527	175	52.0
British Columbia.....	247,558	114	46.1
British Isles and Possessions.....	1,183,977	328	27.7
United States.....	343,903	183	53.2
Europe.....	713,936	234	32.8
Other countries.....	63,598	4	6.3

¹ Exclusive of Yukon and Northwest Territories.² Includes "Not stated."TABLE 79. Deaf-mutes and rates per 100,000 population, by religious denomination, Canada,¹ 1931

Religious Denomination	Total Population (000's omitted)	Total Deaf-Mutes	Rates per 100,000
TOTAL	10,363¹	6,767	65.4
Anglican.....	1,630	652	40.0
Baptist.....	443	203	59.4
Greek Catholic.....	187	100	56.7
Greek Orthodox.....	102	68	66.4
Jewish.....	156	88	56.5
Lutheran.....	394	189	47.8
Presbyterian.....	870	431	49.5
Roman Catholic.....	4,094	3,645	89.1
Salvation Army.....	31	14	45.6
United Church.....	2,017	985	48.8
Other denominations.....	423	282	66.0
Not stated.....	16	48	281.0

¹ Exclusive of Yukon and Northwest Territories.TABLE 80. Blind population and rates per 100,000 population, by racial origin, Canada,¹ 1921 and 1931

Racial Origin	Total Population 1931	Total Blind 1931	Rates per 100,000	
			1921	1931
TOTAL	10,367,833¹	7,343	59.1	70.9
English and Welsh.....	2,802,726	1,721	43.0	61.4
Irish.....	1,230,412	983	52.6	79.9
Scottish.....	1,345,559	978	55.2	72.7
French.....	2,927,525	2,470	56.5	84.4
Austrian, n.o.s.....	48,623	15	1	30.8
Belgian.....	27,566	10	1	58.0
Dutch.....	148,900	108	1	72.5
German.....	473,407	238	33.2	50.3
Hebrew.....	156,720	55	1	35.1
Icelandic.....	19,381	48	1	247.7
Italian.....	98,150	39	25.0	39.7
Norwegian.....	92,116	30	1	32.2
Polish.....	145,487	38	1	26.1
Russian.....	88,120	35	15.0	43.1
Swedish.....	81,166	27	1	33.3
Ukrainian.....	225,110	94	1	41.8
Asiatic.....	84,483	9	1	10.7
Indian.....	117,322	316	209.0	269.3
Negro.....	19,448	42	1	216.0
Various.....	220,675	57	1	25.8
Unspecified.....	8,897	21	1	236.0

¹ Exclusive of Yukon and Northwest Territories.² Data not tabulated separately in 1921.

TABLE 81. Blind population and rates per 100,000 population, by birthplace, Canada, 1931

Birthplace	Total Population	Blind	
		Total	Rates per 100,000
TOTAL	10,362,833	7,343	70.9
Prince Edward Island	99,714	103	103.3
Nova Scotia	507,128	681	134.3
New Brunswick	402,985	385	95.5
Quebec	2,095,070	2,243	83.2
Ontario	2,794,294	1,793	64.2
Manitoba	463,464	139	30.0
Saskatchewan	502,127	106	21.1
Alberta	336,327	64	19.0
British Columbia	247,558	139	56.1
British Isles and Possessions	1,183,977	967	81.7
United States	343,903	231	67.2
Europe	713,936	461	64.6
Other countries	63,598	13	20.4

¹ Exclusive of Yukon and Northwest Territories.

² Includes "Not stated."

TABLE 82. Inmates in mental institutions and rates per 100,000 population, by quinquennial age groups and sex, Canada, 1931

Age Group	Inmates in Mental Institutions			Total Population			Rates per 100,000 Population		
	Both Sexes	Male	Female	Both Sexes	Male	Female	Both Sexes	Male	Female
ALL AGES	31,172	17,021	14,151	10,376,786	5,374,541	5,002,245	300	317	283
0-14	1,320	750	570	3,281,215	1,646,800	1,634,415	40	46	35
15-19	1,354	720	628	1,030,501	525,250	514,341	130	138	122
20-24	1,609	941	728	911,185	463,722	447,463	183	203	163
25-29	2,066	1,216	880	786,281	409,976	376,305	267	297	234
30-34	2,784	1,573	1,211	708,836	368,135	340,701	393	427	355
35-39	3,188	1,806	1,380	688,463	349,081	339,382	463	504	419
40-44	3,474	1,814	1,560	646,099	347,763	298,336	538	650	523
45-49	3,594	2,000	1,524	585,211	321,513	263,698	604	625	578
50-54	3,218	1,715	1,503	485,681	267,332	221,349	659	642	679
55-59	2,597	1,392	1,205	367,025	199,160	167,865	705	699	718
60-64	2,077	1,062	985	294,597	156,912	137,685	705	696	715
65-69	1,492	779	713	231,134	120,635	110,499	646	646	646
70 and over	2,207	1,008	1,199	344,697	173,682	171,015	633	571	697
Not stated	162	97	65	3,771	2,711	1,060	-	-	-

TABLE 83. Inmates in mental institutions and rates per 100,000 population, by birthplace and sex, Canada, 1931

Birthplace	Total Population			Inmates in Mental Institutions			Rates per 100,000 Population		
	Both Sexes	Male	Female	Both Sexes	Male	Female	Both Sexes	Male	Female
TOTAL	10,376,786	5,374,541	5,002,245	31,172	17,021	14,151	300	317	283
Canada	8,069,261	4,076,001	3,993,260	21,948	11,307	10,641	272	277	266
Other British ¹	1,184,890	631,411	553,419	4,448	2,451	1,895	375	408	343
England	751,633	403,073	348,560	2,054	1,702	1,252	273	422	339
Ireland	107,644	58,810	48,828	487	279	208	453	474	428
Scotland	278,735	145,540	134,225	792	449	343	283	309	256
Australia	3,565	1,972	1,593	13	10	3	365	507	188
India	4,672	2,969	1,703	17	10	7	364	337	411
Other	36,929	18,510	18,410	178	99	79	482	535	429
Armenia	633	396	237	6	5	3	2	2	2
Austria	37,391	22,269	15,122	444	313	131	1,187	1,406	866
Belgium	17,033	9,700	7,327	44	21	23	258	216	314
Bulgaria	1,191	627	564	10	6	4	832	673	720
China	42,037	40,575	1,462	113	112	1	269	276	68
Czechoslovakia	22,835	16,702	6,133	34	20	8	149	156	130
Denmark	17,217	12,183	5,034	50	41	9	290	337	179
Finland	30,354	18,472	11,882	158	111	47	521	601	396
France	16,756	8,824	7,932	114	64	50	680	717	638
Germany	39,163	23,743	15,420	187	114	73	477	480	473
Greece	5,579	3,154	2,425	36	23	3	456	554	211
Holland	10,736	6,844	3,892	30	23	7	279	336	185
Hungary	28,323	18,706	9,617	59	40	19	207	214	194
Iceland	6,731	2,845	2,886	52	10	42	907	351	1,455
Italy	42,578	27,309	15,269	105	148	47	458	542	308
Japan	12,261	7,909	4,352	31	22	9	253	278	207
Lithuania	5,704	3,538	2,066	10	12	3	263	330	145
Norway	32,679	22,055	10,624	192	146	46	588	662	423
Poland	171,109	101,492	69,677	452	319	133	282	314	234
Roumania	40,322	24,433	15,889	113	87	26	280	359	164

TABLE 83. Inmates in mental institutions and rates per 100,000 population, by birthplace and sex, Canada, 1931—Con.

Birthplace	Total Population			Inmate* in Mental Institutions			Rates per 100,000 Population		
	Both Sexes	Male	Female	Both Sexes	Male	Female	Both Sexes	Male	Female
Russia ¹	128,165	70,721	57,444	533	363	170	466	583	326
South America.....	1,296	688	608	4	1	3	309	145	493
Spain.....	572	378	194	3	2	1	524	529	515
Sweden.....	34,415	23,906	10,509	235	172	63	683	719	599
Switzerland.....	6,076	4,106	1,970	26	21	5	428	511	254
Syria.....	3,953	2,305	1,648	19	12	7	481	521	425
Turkey.....	921	542	379	5	5	—	543	923	—
United States.....	344,574	175,140	169,434	1,156	639	517	335	365	305
Yugoslavia.....	17,110	12,674	4,436	21	16	5	123	126	113
Other countries.....	5,445	3,123	2,322	112	76	36	2	2	2
At sea.....	731	431	300	5	2	3	2	2	2
Not stated.....	—	—	—	307	211	96	—	—	—

¹ Includes those born at sea.² Total in Canada so small that percentages are misleading.³ Included with British.⁴ Includes Ukraine.**TABLE 84. Inmates in mental institutions per 100,000 population, by broad nativity group and sex, Canada and provinces, 1931**

Province	Inmates per 100,000 Population											
	Total			Canadian Born			British Born			Foreign Born		
	Both Sexes	Male	Female	Both Sexes	Male	Female	Both Sexes	Male	Female	Both Sexes	Male	Female
CANADA.....	300	317	283	272	277	266	375	403	343	399	443	343
Prince Edward Island...	301	295	307	306	303	310	280	163	367	61	-	132
Nova Scotia.....	312	300	326	318	300	338	222	264	176	285	357	190
New Brunswick.....	205	219	190	203	213	192	189	163	217	154	217	85
Quebec.....	302	313	292	301	311	291	317	270	365	294	347	228
Ontario.....	321	320	323	306	298	315	351	361	341	360	386	322
Manitoba.....	316	337	294	212	223	200	483	529	428	541	543	539
Saskatchewan.....	249	297	191	157	185	127	447	544	315	399	448	329
Alberta.....	228	264	184	147	169	125	304	335	265	353	396	289
British Columbia.....	372	450	275	244	296	187	453	516	379	563	641	394

TABLE 85. Inmates in mental institutions and rates per 100,000 population, by racial origin, Canada, 1931¹

Racial Origin	Population	Inmates in Mental Institutions	
		Total	Rates per 100,000 Population
ALL RACES.....	10,376,788	31,172	300
British.....	5,381,071	16,993	316
English.....	2,741,419	9,951	363
Irish.....	1,230,808	3,308	269
Scottish.....	1,346,350	3,734	277
Other.....	62,494	—	—
French.....	2,927,990	8,497	290
Belgian.....	27,585	49	178
Bulgarian.....	3,160	15	475
Chinese.....	46,519	118	254
Czech and Slovak.....	30,401	121	400
Danish.....	34,118	75	220
Finnish.....	43,885	163	372
German.....	473,544	980	208
Greek.....	9,444	61	644
Hebrew.....	156,726	358	228
Hungarian.....	40,582	101	224
Indian.....	19,382	73	376
Icelandic.....	122,911	109	90
Italian.....	98,173	288	293
Japanese.....	23,242	35	150
Negro.....	19,456	92	473
Norwegian.....	93,243	266	285
Polish.....	145,510	452	310
Romanian.....	29,054	63	217
Swedish.....	81,308	323	397
Yugoslavia.....	16,174	50	309
Others.....	21,600	132	611
Not stated.....	8,898	608	6,811

¹Rates for Austrian, Dutch, Russian and Ukrainian origins omitted because they were demonstrably unreliable.

TABLE 86. Percentages adhering to the four principal religions in order of magnitude, by racial origin, Canada, 1931

Racial Origin	Proportion of Race Adhering to									
	(1) Principal		(2) Second Largest		(3) Third Largest		(4) Fourth Largest		(5) All Others	(6) Total
	Religion	P.C.	Religion	P.C.	Religion	P.C.	Religion	P.C.	P.C.	P.C.
ALL RACES.....	Roman Catholic¹.....	41.3	United Church.....	19.4	Anglican.....	15.8	Presbyterian.....	8.4	15.1	100.0
English.....	Anglican.....	41.1	United Church.....	31.5	Baptist.....	8.7	Presbyterian.....	7.1	11.6	100.0
Irish.....	United Church.....	32.1	Roman Catholic ¹	31.3	Anglican.....	17.6	Presbyterian.....	11.5	7.5	100.0
Scottish.....	United Church.....	37.2	Presbyterian.....	34.2	Anglican.....	10.2	Roman Catholic ¹	9.4	9.0	100.0
Welsh, etc.....	United Church.....	35.7	Anglican.....	34.7	Baptist.....	10.8	Presbyterian.....	9.3	9.5	100.0
French.....	Roman Catholic ¹	97.3	United Church.....	1.0	Anglican.....	0.8	Presbyterian.....	0.3	0.6	100.0
Austrian, n.o.s.....	Roman Catholic ¹	67.4	Lutheran.....	13.2	Greek Orthodox.....	10.0	United Church.....	3.2	7.2	100.0
Belgian.....	Roman Catholic ¹	89.4	United Church.....	3.9	Anglican.....	2.9	Presbyterian.....	1.9	1.9	100.0
Czech and Slovak.....	Roman Catholic ¹	79.8	Lutheran.....	5.6	United Church.....	4.1	Greek Orthodox.....	2.7	7.8	100.0
Danish.....	Lutheran.....	55.4	United Church.....	16.2	Anglican.....	9.2	Presbyterian.....	5.1	14.1	100.0
Dutch.....	United Church.....	32.1	Mennonite.....	25.2	Anglican.....	10.9	Baptist.....	8.7	23.1	100.0
Finnish.....	Lutheran.....	88.3	United Church.....	3.9	Presbyterian.....	2.1	Anglican.....	1.5	4.2	100.0
German.....	Roman Catholic ¹	31.1	Roman Catholic ¹	23.8	United Church.....	15.4	Mennonite.....	7.3	23.4	100.0
Greek.....	Greek Orthodox.....	64.9	Roman Catholic ¹	7.2	Anglican.....	10.9	United Church.....	3.1	13.9	100.0
Hebrew.....	Jewish.....	99.1	Roman Catholic ¹	0.2	Anglican.....	0.2	United Church.....	0.1	0.4	100.0
Hungarian.....	Roman Catholic ¹	72.5	Presbyterian.....	10.3	Lutheran.....	5.3	United Church.....	4.2	7.7	100.0
Icelandic.....	Lutheran.....	77.2	United Church.....	8.4	Small sects.....	5.9	Anglican.....	3.2	5.3	100.0
Italian.....	Roman Catholic ¹	93.4	United Church.....	3.1	Anglican.....	1.5	Presbyterian.....	1.0	2.0	100.0
Norwegian.....	Lutheran.....	73.6	United Church.....	11.9	Anglican.....	3.9	Presbyterian.....	2.8	7.7	100.0
Polish.....	Roman Catholic ¹	85.4	Lutheran.....	4.7	Greek Orthodox.....	3.8	United Church.....	1.4	4.8	100.0
Romanian.....	Greek Orthodox.....	42.0	Roman Catholic ¹	39.4	Lutheran.....	6.7	United Church.....	3.6	8.3	100.0
Russian.....	Roman Catholic ¹	28.2	Small sects.....	18.0	Lutheran.....	14.4	Mennonite.....	13.7	25.7	100.0
Swedish.....	Lutheran.....	82.3	United Church.....	15.1	Anglican.....	5.5	Baptist.....	5.0	12.1	100.0
Ukrainian.....	Roman Catholic ¹	69.4	Greek Orthodox.....	24.9	United Church.....	1.6	Presbyterian.....	0.8	3.6	100.0
Yugoslavia.....	Roman Catholic ¹	76.0	Greek Orthodox.....	15.4	Lutheran.....	2.4	United Church.....	1.5	4.7	100.0
Chinese.....	Confucian, etc.....	53.1	Not stated.....	17.5	United Church.....	10.0	No religion.....	7.0	12.4	100.0
Japanese.....	Confucian, etc.....	64.6	United Church.....	22.6	Anglican.....	5.6	Small sects.....	2.5	4.6	100.0
Indian.....	Roman Catholic ¹	52.1	Anglican.....	26.3	United Church.....	13.2	Small sects.....	4.7	3.7	100.0
Negro.....	Baptist.....	41.2	United Church.....	21.5	Anglican.....	17.5	Small sects.....	7.8	12.0	100.0

¹ Roman Catholic includes persons in former censuses shown as Greek Catholic.

TABLE 87. Percentages adhering to the four principal religions in order of magnitude, by birthplace, Canada, 1931

Birthplace	Proportion of Birthplace Adhering to									
	(1) Principal		(2) Second Largest		(3) Third Largest		(4) Fourth Largest		(5) All Others	(6) Total
	Religion	P.C.	Religion	P.C.	Religion	P.C.	Religion	P.C.	P.C.	P.C.
TOTAL	Roman Catholic ...	41.39	United Church ...	19.44	Anglican	15.76	Presbyterian	8.39	15.11	100.00
<i>British born</i>	<i>Roman Catholic</i>	<i>41.75</i>	<i>United Church</i>	<i>20.47</i>	<i>Anglican</i>	<i>17.17</i>	<i>Presbyterian</i>	<i>8.94</i>	<i>11.69</i>	<i>100.00</i>
Canada	Roman Catholic ...	46.82	United Church ...	20.57	Anglican	12.78	Presbyterian	7.62	12.21	100.00
Prince Edward Island.....	Roman Catholic.....	42.73	United Church.....	26.27	Presbyterian.....	16.75	Anglican.....	6.00	8.25	100.00
Nova Scotia.....	Roman Catholic.....	39.94	United Church.....	22.68	Baptist.....	16.54	Anglican.....	16.49	13.79	100.00
New Brunswick.....	Roman Catholic.....	45.77	Baptist.....	20.84	United Church.....	15.54	Anglican.....	11.51	6.34	100.00
Quebec.....	Roman Catholic.....	89.98	Anglican.....	3.74	United Church.....	2.79	Presbyterian.....	1.42	2.07	100.00
Ontario.....	United Church.....	34.66	Roman Catholic.....	20.47	Anglican.....	18.80	Presbyterian.....	13.01	13.06	100.00
Manitoba.....	United Church.....	27.68	Roman Catholic.....	27.35	Anglican.....	16.65	Presbyterian.....	7.67	20.65	100.00
Saskatchewan.....	Roman Catholic.....	27.38	United Church.....	26.34	Anglican.....	12.91	Lutheran.....	11.06	22.31	100.00
Alberta.....	Roman Catholic.....	25.57	United Church.....	24.91	Anglican.....	14.34	Lutheran.....	9.76	25.62	100.00
British Columbia.....	Anglican.....	29.37	United Church.....	26.95	Roman Catholic.....	16.81	Presbyterian.....	11.34	15.53	100.00
Yukon and Northwest Territories.....	Anglican.....	42.48	Roman Catholic.....	37.14	Pagan.....	11.85	No religion.....	3.55	4.98	100.00
Not stated.....	Roman Catholic.....	26.82	Anglican.....	17.96	United Church.....	16.08	Presbyterian.....	7.87	31.27	100.00
British Isles	Anglican	47.47	United Church ...	19.60	Presbyterian	18.36	Roman Catholic ...	6.64	7.93	100.00
England.....	Anglican.....	65.58	United Church.....	16.59	Roman Catholic.....	4.71	Presbyterian.....	4.44	8.71	100.00
Ireland.....	Anglican.....	28.21	Roman Catholic.....	24.52	Presbyterian.....	22.70	United Church.....	18.79	5.78	100.00
Scotland.....	Presbyterian.....	53.72	United Church.....	27.07	Anglican.....	7.99	Roman Catholic.....	5.06	6.16	100.00
Wales.....	Anglican.....	47.13	United Church.....	27.50	Baptist.....	10.43	Presbyterian.....	7.39	7.49	100.00
Lesser Isles.....	Anglican.....	50.41	United Church.....	23.76	Presbyterian.....	10.55	Roman Catholic.....	6.70	8.58	100.00
British Possessions	Anglican	38.88	United Church ...	24.35	Roman Catholic ...	18.31	Presbyterian	5.76	12.70	100.00
Newfoundland.....	Anglican.....	32.21	United Church.....	32.09	Roman Catholic.....	22.62	Salvation Army.....	4.58	8.50	100.00
Other.....	Anglican.....	47.91	United Church.....	13.85	Roman Catholic.....	12.47	Presbyterian.....	8.62	17.15	100.00
<i>Foreign born</i>	<i>Roman Catholic</i>	<i>57.75</i>	<i>Lutheran</i>	<i>17.84</i>	<i>United Church</i>	<i>10.94</i>	<i>Jewish</i>	<i>7.45</i>	<i>26.04</i>	<i>100.00</i>

Europe	Roman Catholic	45-17	Lutheran	22-92	Jewish	11-07	Greek Orthodox	6-47	14-37	100-00
Austria	Roman Catholic	66-49	Greek Orthodox	10-40	Lutheran	9-38	Jewish	7-16	6-59	100-00
Belgium	Roman Catholic	81-93	United Church	2-78	Anglican	2-03	Presbyterian	1-61	1-85	100-00
Czechoslovakia	Roman Catholic	80-26	Lutheran	7-29	Presbyterian	2-33	Greek Orthodox	2-22	7-00	100-00
Finland	Lutheran	81-11	United Church	2-79	Presbyterian	1-45	Anglican	1-19	3-46	100-00
France	Roman Catholic	87-18	Anglican	4-22	United Church	2-99	Presbyterian	2-94	12-24	100-00
Germany	Lutheran	51-69	Roman Catholic	27-93	United Church	5-20	Baptist	2-94	12-24	100-00
Holland	Roman Catholic	27-66	United Church	21-31	Presbyterian	16-13	Lutheran	8-58	26-32	100-00
Hungary	Roman Catholic	71-83	Presbyterian	8-94	Lutheran	6-50	United Church	3-56	9-17	100-00
Italy	Roman Catholic	96-06	United Church	1-16	Anglican	0-64	Presbyterian	0-62	1-52	100-00
Poland	Roman Catholic	65-99	Jewish	14-59	Greek Orthodox	8-07	Lutheran	6-23	5-10	100-00
Roumania	Greek Orthodox	32-70	Roman Catholic	30-73	Jewish	18-58	Lutheran	10-03	7-66	100-00
Russia	Jewish	35-28	Mennonite	19-12	Roman Catholic	14-22	Lutheran	13-56	17-82	100-00
Scandinavian Countries	Lutheran	81-34	United Church	6-69	Anglican	2-92	Baptist	2-08	6-97	100-00
Denmark	Lutheran	76-84	United Church	8-66	Anglican	4-95	Presbyterian	2-94	6-61	100-00
Iceland	Lutheran	82-53	Unitarian	5-53	United Church	4-97	Anglican	2-27	4-70	100-00
Norway	Lutheran	86-10	United Church	5-34	Anglican	2-18	Presbyterian	1-64	4-78	100-00
Sweden	Lutheran	78-88	United Church	7-27	Baptist	3-66	Anglican	2-70	7-49	100-00
Ukraine	Roman Catholic	71-87	Greek Orthodox	16-79	Mennonite	2-83	Jewish	2-46	6-05	100-00
Yugoslavia	Roman Catholic	78-80	Greek Orthodox	12-38	Lutheran	5-63	United Church	0-93	4-24	100-00
Other	Roman Catholic	36-41	Greek Orthodox	22-55	Lutheran	13-82	Jewish	8-77	18-45	100-00
Asia	Confucian	51-32	United Church	19-34	Roman Catholic	5-47	No religion	4-89	25-43	100-00
China	Confucian	53-74	United Church	8-92	No religion	6-73	Presbyterian	4-42	26-19	100-00
Japan	Confucian	60-44	United Church	18-19	Anglican	5-14	Roman Catholic	1-20	6-03	100-00
Other	Roman Catholic	39-65	Greek Orthodox	25-11	Anglican	14-42	United Church	4-53	16-29	100-00
United States	Roman Catholic	27-99	United Church	27-70	Lutheran	10-54	Anglican	9-72	24-05	100-00
Other countries	Roman Catholic	38-41	Anglican	23-80	United Church	12-09	Presbyterian	8-13	17-57	100-00

APPENDIX

FORM 1

SEVENTH CENSUS OF CANADA, 1931

Population

Province.....Electoral District.....Subdistrict No....
 (Write name and number)

in municipality of.....
 (Insert name and state whether city, town, village or rural municipality)

Number in the order of visitation		Name and Residence		Description of Home					
Dwelling house	Family, house- hold or insti- tution	Name of each person in family, household or institution	Place of Abode	Home owned, or rented	If owned give value. If rented, give rent paid per month	Class of house (See instruc- tions)	Materials of con- struction (See instruc- tions)	Rooms occupied by this family	Has this family a radio?
			(In rural localities give parish or town- ship. In cities, towns and villages, give street and number of dwelling)						
1	2	3	4	5	6	7	8	9	10

Personal Description				Place of Birth			Immigration		Nationality and Racial Origin	
Relation- ship to head of family or house- hold	Sex	Single, married, widowed, divorced	Age at last birth- day	Country or place of birth of this person and of parents of this person. If born in Canada give province. If foreign-born give country. (See instructions)			Year of immigra- tion to Canada	Year of natu- raliza- tion	Nationality (Country to which this person owes allegiance)	Racial origin
				Person	Father	Mother				
11	12	13	14	15	16	17	18	19	20	21

Language			Religion	Education		Occupation and Industry			
Can speak Eng- lish	Can speak French	Language other than English or French spoken as mother tongue	Religious body, denomi- nation or community, to which this person adheres or belongs	Can read and write	Months at school since Sept. 1, 1930	Occupation	Industry	Class of worker	Total earnings in the past twelve months (Since June 1, 1930)
						Trade, profession or particular kind of work, as carpenter, weaver, sawyer, merchant, farmer, salesman, teacher, etc. (Give as defi- nite and precise information as possible)			
22	23	24	25	26	27	28	29	30	31

Unemployment

If an employee, were you at work Monday, June 1, 1931?	If answer to previous question is NO, why were you not at work on Monday, June 1, 1931? (For example, no job, sick, accident, on holidays, strike or lockout, plant closed, no materials, etc.)	Total number of weeks unemployed from any cause in the last 12 months	Of the total number of weeks reported out of work in column 34, how many were due to—					
			No Job	Illness	Accident	Strike or lockout	Temporary lay-off	Other causes (See instructions 184)
32	33	34	35	36	37	38	39	40

INSTRUCTIONS TO ENUMERATORS ON RACIAL ORIGIN AND BIRTHPLACE, 1931 CENSUS

RACIAL ORIGIN

122. Column 21: Racial Origin. The purpose of the information sought in this column is to measure as accurately as possible the racial origins of the population of Canada, i.e., the original sources from which the present population has been derived.

In the case of distinct ethnic stocks, involving differences in colour (i.e. the black, red, yellow or brown races) the answer will be Negro, Indian, Japanese, Chinese, Hindu, Malayan, etc., as the case may be.

In the case of persons deriving from European stocks, the proper answer will in many cases be indicated by the country or portion of the country from which the family of the person originally came, for example, English, Scotch, Irish, Welsh, French, but certain stocks may be found in more than one European country. In such cases the country of birth or the country from which they came to Canada may not indicate their racial origin. For example the Ukrainians (Ruthenians) may have immigrated to Canada from Poland, Russia, Austria, Hungary but they should not be classed as Poles, Russians, Austrians, Hungarians, but as Ukrainians. Similarly many immigrants from Russia are of German origin. The enumerator should make specific inquiry and should not assume that the country of birth discloses origin. A German born in France is not French by origin although he may be a citizen of France.

123. Origin is to be traced through the father. A person whose father is English and whose mother is French will be recorded as of English origin, while a person whose father is French and whose mother is English will be recorded as of French origin, and similarly with other combinations. In the case of the aboriginal Indian population of Canada, the origin is to be traced through the mother, and the names of their tribes should be given as Chippewa, Cree, Blackfoot, etc. The children begotten of marriages between white and black or yellow races will be recorded as Negro, Chinese, Japanese, Indian, etc., as the case may be. The object of this question is to obtain a knowledge of the various constituent elements that have combined from the earliest times to make up the present population of Canada.

COUNTRY OF BIRTH

106. Column 15: Country or place of birth of person. If the person was born in Canada the name of the province or territory in which born should be entered in Column 15. The names of the provinces and territories will be denoted by abbreviations. (See Instruction 43.)

107.—If born out of Canada. If the person was born outside of Canada the enumerator will enter the name of the country (not city, town or state) in which he or she was born.

Since it is essential that each foreign-born person be credited to the country in which his birthplace is now located, special attention must be given to the six countries which lost a part of their territory in the readjustments following the World War. These six countries are as follows:—

Austria, which lost territory to Czechoslovakia, Italy, Yugoslavia, Poland and Roumania.

Hungary, which lost territory to Austria, Czechoslovakia, Italy, Poland, Roumania and Yugoslavia.

Bulgaria, which lost territory to Greece and Yugoslavia.

Germany, which lost territory to Belgium, Czechoslovakia, Danzig, Denmark, France, Lithuania and Poland.

Russia, which lost territory to Estonia, Finland, Latvia, Lithuania, Poland and Turkey.

Turkey, which lost territory to Greece and Italy, and from which the following areas became independent: Iraq (Mesopotamia); Palestine (including Transjordan); Syria (including the Lebanon); and various States and Kingdoms in Arabia (Asir, Hejaz and Yemen).

If the person reports one of these six countries as his place of birth or that of his parents, ask specifically whether the birthplace is located within the present area of the country; and if not, find out to what country it has been transferred. If a person was born in the province of Bohemia, for example, which was formerly in Austria but is now a part of Czechoslovakia, the proper return for country of birth is Czechoslovakia. If the enumerator cannot ascertain with certainty the present location of the birthplace, where this group of countries is involved, he should enter in addition to the name of the country, the name of the province or state in which the person was born, as Alsace-Lorraine, Bohemia, Croatia, Galicia, Moravia, Slovakia, etc., or the city as Warsaw, Prague, Strasbourg, etc.

If born in British Isles. Instead of Great Britain or British Isles, the particular country should be given, as England, Ireland, Scotland, Wales, Isle of Man, Channel Islands, Hebrides, Orkneys, Shetlands, etc.

108. Language not evidence of birthplace. The language spoken should not be relied upon to determine birthplace. This is especially true of the German language, for over one-third of the Austrians and nearly three-fourths of the Swiss speak German; it is also spoken by many people in Russia.

109. If born at sea. If the person was born "at sea" his birthplace should be so recorded.

110. Write birthplace in full. To prevent errors and to facilitate the work of compilation in the Bureau of Statistics, the names of the place of birth of persons born out of Canada **must be written in full.**

111. Column 16: Place of birth of father. Enter in Column 16 the birthplace of the father of the person whose own birthplace was entered in Column 15. In designating the birthplace of the father follow the same instructions as for the person himself. (See Instructions 106 to 110). In case, however, a person does not know the Province of birth of his father, but knows that he was born in Canada, write "Canada" rather than "unknown."

112. Column 17: Place of birth of mother. Enter in Column 17 the birthplace of the mother of the person whose own birthplace was entered in Column 15. In designating the birthplace of the mother, follow the same instructions as for the person himself. (See Instructions 106 to 110). In case, however, a person does not know the Province of birth of his mother, but knows that she was born in "Canada" write Canada rather than "unknown."

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